

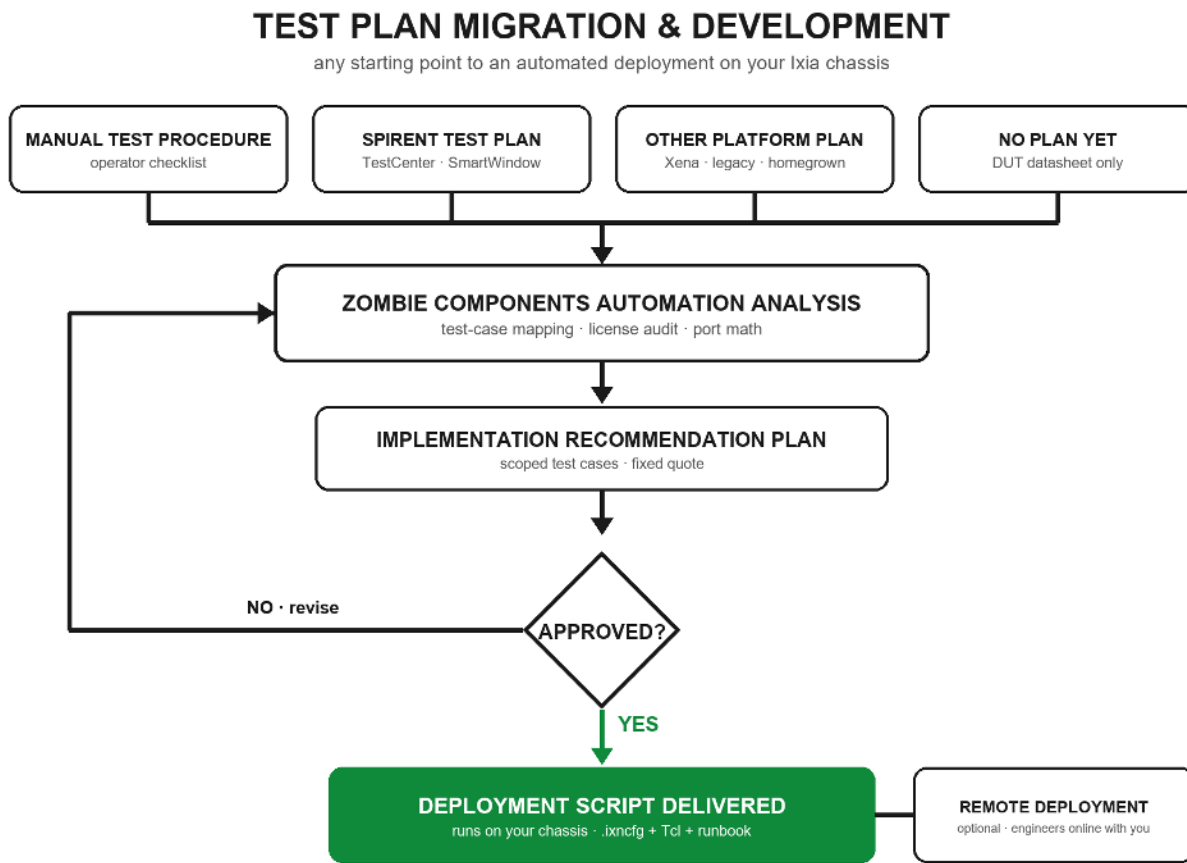
Ixia Test Plan Migration and Development

Automated test plans for Ixia chassis owners, centered on IxNetwork and IxLoad: migrated from manual procedures and legacy test platforms, or developed new from your DUT specification, delivered as a deployment script your team runs.

Document	Test Plan Migration and Development service brochure · Rev B · 2026-07-31
Starting points	Manual procedures · Spirent TestCenter / SmartBits · Xena and other legacy platforms · DUT datasheet only
Analysis	Zombie Components automation analysis: test-case mapping, license audit, port math
Deliverables	Integration Recommendations & Options report (\$300 fixed, by email + US Mail); on approval, deployment work quoted per tier (.ixncfg + Tcl + runbook)
Chassis	Optixia XM / XG12 / XGS · IxOS 6.7 through 9.15 · running Windows 7, Windows 10, or Native IxOS Linux
Coverage	Any DUT class · any module family those platforms host · classic 1G through 400GE
Assistance	Remote deployment assistance by our engineers
Terms	Money-back guarantee · NDA for shared testing information · extended support plans available

How the service runs

Every engagement follows the same path. Analysis is performed against your chassis inventory and license schedule and delivers the Integration Recommendations & Options report, a fixed \$300 fee. Every deployment tier below that box is an additional-fee engagement quoted inside the report, and nothing is built until you approve it.

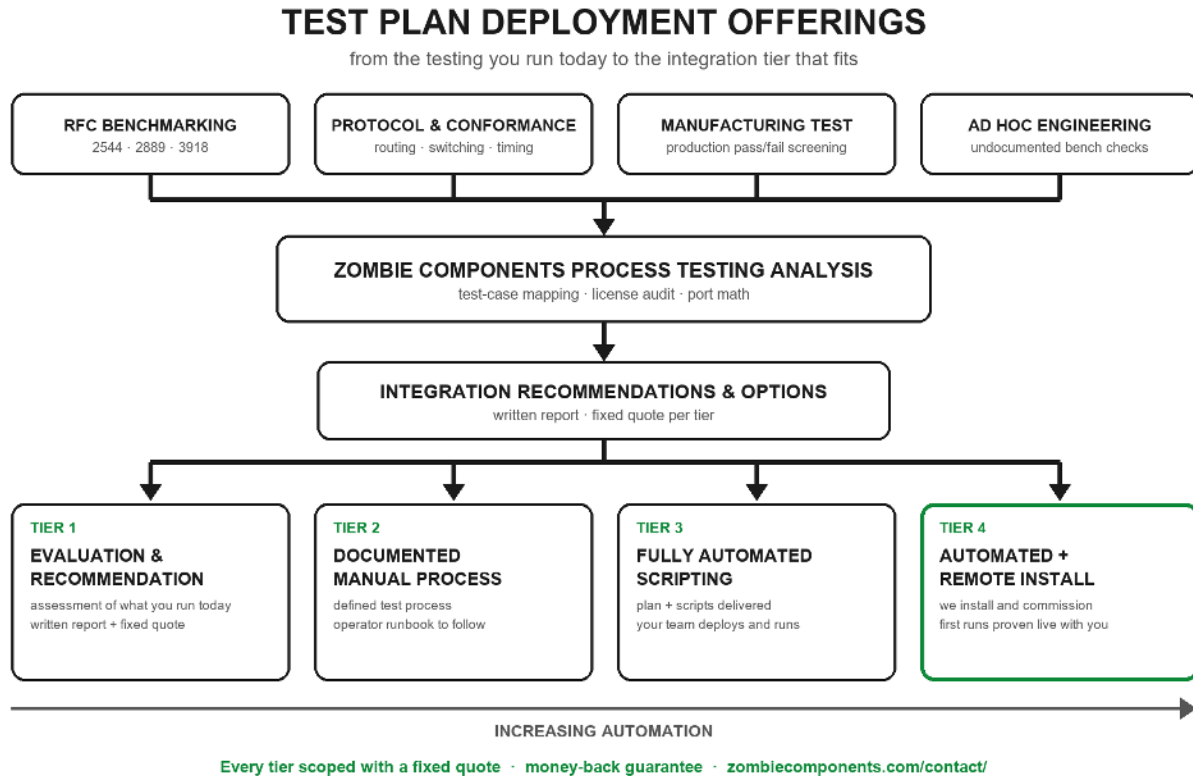


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Service tiers

Four ways to take the service, from a written assessment to turnkey automation. The analysis stage is a fixed \$300 fee and delivers the Integration Recommendations & Options report by email and US Mail; every tier beyond it is an additional-fee engagement, quoted inside that report before work begins.



Where we start

- 1 **From a manual procedure.** An operator checklist becomes a numbered sequence of IxNetwork QuickTests: RFC 2544 and RFC 2889 runs with defined frame-size sweeps, search algorithms, trial counts, and per-frame-size pass gates. After launch the run needs no operator at all.
 - 2 **From another vendor's tester.** Plans written for retired or orphaned platforms translate: SmartBits SmartWindow workflows, Spirent TestCenter plans, Xena configurations, homegrown script harnesses. The intent of each test case carries over; the execution moves to QuickTests and gains automated binary search, consistent reporting, and exact repeatability.
 - 3 **From a blank sheet.** Given a DUT datasheet and the question you need answered, we design the plan: RFC 2544 / 2889 / 3918 benchmarking, ITU-T Y.1564 service activation, protocol emulation where the DUT terminates protocols, IxLoad application and load testing where the DUT is stateful, and soak cases where the risk is thermal or long-duration stability.
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What a delivered plan contains

- 1 DUT description and port map, including the physical-layer settings (media mode, autonegotiation, flow control) that silently skew results when left at defaults.
 - 2 Numbered test cases: objective, method, the exact QuickTest and search algorithm, traffic map, and proposed pass/fail thresholds flagged for your engineering to ratify.
 - 3 A discovery gate up front: a TC0 that resolves DUT behaviors the datasheet does not state, before any threshold is frozen.
 - 4 The wizard-level execution procedure, written so a technician who has never opened IxNetwork can run the suite.
 - 5 Automation exports: archived .ixncfg configurations that rerun a test in two clicks, and Tcl ScriptGen exports for scripted nightly or manufacturing regression.
 - 6 A license map tying every test case to the licensed feature that runs it, plus the licensed headroom your current plan does not exercise.
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Example scenario: retiring a SmartBits SMB-600B

One delivered engagement, shown as an example scenario; the service itself is generic and the plan structure is identical for every DUT and module family. The device under test in this scenario happens to be a transparent three-port HDBaseT Ethernet extender: no host stack, no management IP, no MAC address of its own. The customer benchmarked it by hand in SmartWindow on a Spirent SmartBits SMB-600B. The migrated plan treats the device as a black-box forwarding element and rebuilds the work as ten test cases: a short forwarding-behavior discovery gate, then automated RFC 2544 throughput, latency, frame-loss and back-to-back runs, RFC 2889 one-to-many, many-to-one and fully-meshed runs matched to the extender's one-to-two port geometry, flow-control transparency, frame-integrity and MTU-boundary cases, and an overnight soak. The port math moved too: four SmartBits test ports became eight extender systems tested in parallel per XM2 chassis, twenty-four across the customer's fleet.

Ethernet Test Plan

XXX HDBaseT Ethernet Extender — Automated Verification with Ixia Optixia

XM2 / IxNetwork

Document	XXX Extender Ethernet Test Plan, Rev B — licensing updated to as-delivered schedule,
DUT	extender system: Tx unit (1× GbE port) + Rx unit (2× GbE ports), linked via HDBaseT over up to 100 m CAT-x
Test system	3× Ixia Optixia XM2 chassis, each with 2× Xcelion-Ultra NP load modules (12× 10/100/1000 Mbps GbE ports + 1× 10GbE aggregation port per module) — 24 GbE test ports per chassis, 72 fleet-wide. IxOS 8.0 + IxNetwork with 102 permanent licensed features per ZC invoice
Prepared by	Zombie Components LLC — Allen Hall
Basis	IxNetwork User Guide (CHM), RFC 2544, RFC 2889, invoice license schedule

1. Scope and Test Philosophy

The DUT is a transparent Layer-1/Layer-2 Ethernet transfer device. It has no host stack, no management IP, no MAC address of its own on the data path, and requires no configuration. It must simply pass Ethernet frames between its three external GbE ports across the HDBaseT link. This test plan therefore treats the DUT as a black box 3-port forwarding element and benchmarks it using the industry-standard RFC 2544 (device benchmarking) and RFC 2889 (LAN switching device benchmarking) methodologies, executed as automated IxNetwork QuickTests.

QuickTests are packaged, self-executing tests built into IxNetwork. Each test runs its own search algorithm (binary/step/combo), iterates across frame sizes, applies user-defined pass/fail criteria, and produces a PDF/CSV report automatically — no operator interaction is required once the test is launched. This directly replaces and exceeds the manual SmartWindow workflow used on the SmartBits SMB-600B.

Critical configuration principle — no host device present: because the DUT terminates nothing, all test traffic is defined at Layer 2 only. IxNetwork supports this natively in two ways, and no ARP, ping, or protocol session is ever required:

- **Ethernet/VLAN endpoints** — traffic items are built between MAC-only endpoints. Source/destination MAC addresses belong to the Ixia ports themselves; the DUT just forwards the frames. This is the method used by the RFC 2544/2889 QuickTests when "Ethernet" frame data is selected in the Protocol Selection step.
- **Raw traffic items** — per the IxNetwork traffic wizard, Raw traffic is sent on a port-to-port basis without protocol interfaces, with every header field manually defined in the Packet Editor. Useful for corner-case frames (illegal lengths, custom EtherTypes, error injection).

2. Test Bed and Physical Connectivity

Each Xcelion-Ultra NP module provides 12 ports of 10/100/1000 Mbps Ethernet plus one 10GbE aggregation port. Each XM2 chassis carries two modules — 24 GbE test ports per chassis, and with three chassis delivered, 72 GbE test ports fleet-wide. Each XXX extender system consumes 3 test ports, so up to **8 complete extender systems can be tested in parallel per chassis (24 across the fleet)** — versus 4 total ports on the SmartBits setup — with

Sample plan cover from the example scenario, customer details redacted.

The plan as a document

Each test case states its objective, method, QuickTest, traffic map, and pass criteria in a form your engineering team can ratify line by line. Proposed thresholds are marked as proposals until you freeze them. The structure is the same for every plan regardless of DUT or module family.

3. Test Cases

All test cases below are automated IxNetwork QuickTests unless noted. Frame-size sweep for every RFC test: 64, 128, 256, 512, 1024, 1280, 1518 bytes (RFC 2544 §9.1 recommended set), plus 1522 with a VLAN tag where noted. Default trial count: 2 or more trials (the QuickTest Test Parameters page recommends multiple trials to verify result consistency); duration 60 s per iteration for baseline runs. Pass/fail thresholds marked (*) are proposed defaults and must be ratified by XXX engineering against product specifications before formal qualification.

TC0 — Forwarding-Behavior Discovery and Link Baseline (manual, ~15 min)

Objective	Determine whether the DUT floods or learns; verify error-free baseline forwarding.
Method	Build one Ethernet/VLAN traffic item P1→P2 (fixed src/dst MACs) at 10% line rate, 512-byte frames, 60 s. While it runs, watch P3 receive counters in L2 statistics. If P3 receives (near-)equal frame counts, the DUT floods unicast; if P3 stays silent after initial frames, the DUT learns MACs. Repeat P2→P1 and P2→P3 to map all forwarding paths, including whether the two Rx-unit ports forward to each other locally or hairpin across the HDBT link.
Also record	CRC/alignment errors, undersize/oversize counts (must be 0); actual negotiated speed/duplex per port.
Gate	No test below runs until TC0 passes clean and the forwarding model is documented.

TC1 — RFC 2544 Throughput / Latency (QuickTest)

Objective	Zero-loss throughput and forwarding latency of each extender path.
QuickTest	RFC 2544 → Throughput/Latency. Binary search (wizard default), constant loading, search granularity 0.1%.
Traffic map	Run 1: P1↔P2 bidirectional pair. Run 2: P1↔P3. Run 3 (if TC0 shows local Rx-to-Rx forwarding): P2↔P3.
Protocol selection	NGPF, Ethernet-only frame data (MAC endpoints, no IP required). Classic Protocol Framework is the fallback if NGPF Ethernet-only is unavailable on this port type.
Pass/fail	(*) Throughput ≥ 99% of line rate at 1518 B and ≥ 95% at 64 B each direction; latency ≤ XXX spec (record store-and-forward latency per frame size; expect HDBT serialization to dominate); jitter and sequence-error criteria enabled, seq errors = 0. Pass/fail computed per frame size (wizard "Per Frame Size" option).
Output	Rate/latency/jitter per frame size per direction, auto-generated report.

TC2 — RFC 2544 Frame Loss Rate (QuickTest)

Objective	Frame loss as a function of offered load, per RFC 2544 §26.3.
QuickTest	RFC 2544 → Frame Loss. One-to-one map, start at 100% rate, coarse granularity (10% steps) then fine (1%) around the knee.
Traffic map	P1→P2, then P1→P3, then reverse directions.
Pass/fail	(*) 0% loss at ≤ 95% offered load for all frame sizes; loss-vs-load curve archived for the datasheet.

TC3 — RFC 2544 Back-to-Back Frames / Burst Tolerance (QuickTest)

Objective	Longest max-rate burst forwarded with zero loss — exposes buffering limits of the HDBT link adaptation logic.
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Mapped to licenses you already have

The plan closes with a feature map: each test case tied to the specific licensed feature that executes it, so there is no surprise dependency on software you do not have. The same section records the licensed headroom: capabilities already on your system that the current plan does not exercise, which is usually where the next plan comes from.

Feature	Description	Used by
895-0100	IxNetwork Framework — traffic wizard (Ethernet/VLAN and Raw endpoints), statistics, capture, reporting, ScriptGen	All TCs, Sections 4–5
930-2022	RFC 2544 QuickTest suite (custom/integrated)	TC1, TC2, TC3
930-2401 / 930-2066	RFC 2889 QuickTest suite	TC4, TC5, TC6, TC8(c)
922-0001 / 932-0101	IxOS IxServer framework; Analyzer Server chassis component (capture/analysis)	TC7, TC8 captures

Licensed headroom relevant to XXX beyond this plan — already on the system, no further cost:

- **930-2409 Asymmetric Data Performance QuickTest** — purpose-built for DUTs with unequal upstream/downstream capacity; a natural complement to TC4/TC5 given the extender's 1-vs-2 port geometry.
- **930-2070 + 930-2410 IEEE 1588v2 (PTP) emulation and QuickTest** — measures whether the extender passes precision-timing traffic and how much timing error it introduces. Directly relevant to AV/camera-extension deployments where PTP or other timing protocols may transit the link.
- **930-2408 ITU-T Y.1564 QuickTest** — service-activation methodology (CIR/EIR, multi-service); an alternative acceptance-test framework if 's customers require carrier-style birth certificates.
- **930-3460/930-3462 AppLibrary slot features** plus the full L2/3 protocol emulation catalog (BGP, OSPF, IS-IS, multicast, PPPoX, DHCP, STP, LACP, CFM/OAM, and the rest of the 930-2xxx series) — host, router, and L4-7 application emulation for 's newer, more capable equipment. Not needed for the transparent extender, but this is what removes the ceiling the SmartBits imposed.

One scoping note: the ImpairNet software features (930-2600/2601/2602/2603) are licensed but require ImpairNet impairment hardware modules, which are not part of this configuration. They activate only if impairment blades are added later.

7. Deliverables and Open Items

- Per-TC IxNetwork auto-generated reports (PDF) + CSV exports; archived .ixncfg configuration files for every TC; ScriptGen Tcl scripts for the regression set.
- Summary matrix: throughput/latency/loss per path, per frame size, per HDBT cable length.
- Open item 1 (XXX): ratify all (*) pass/fail thresholds against product specs.
- Open item 2 (XXX): confirm required behavior for pause frames and reserved multicast (TC7) and errored/oversize frames (TC8).
- Open item 3 (TC0 output): forwarding model — flood vs. learn — documented and folded back into TC4–TC6 learning-frame settings.

Deployment and support

- 1 **Deployment script.** On approval of the quoted tier in your Integration Recommendations & Options report you receive the runnable package: archived .ixncfg configuration per test case, Tcl ScriptGen exports for regression, and a step-by-step runbook. Your team runs it on your chassis; nothing phones home. Packages are delivered for the three environments Ixia labs actually run: Windows 7 hosts pinned to legacy IxOS client generations, Windows 10 hosts on current clients, and Native IxOS Linux on the chassis itself.
 - 2 **Remote deployment assistance.** Optionally, our engineers connect while your first runs execute: port map verification, license activation checks, and the first pass/fail review done together with your team.
 - 3 **Remote chassis configuration scripting.** Chassis and port configuration, ownership handling, test launch, and results collection driven remotely through Ixia's automation interfaces: the Tcl layer every IxOS generation ships, the script exports and automation APIs of IxNetwork and IxLoad, and the REST and Python interfaces on newer releases. Where an interface stops short, we build the missing piece: command-line utilities and scheduled jobs developed for your environment.
 - 4 **Money-back guarantee.** We will work with you to meet your stated goals or you pay nothing.
 - 5 **Extended support plans.** Available for ongoing regression programs: plan revisions as firmware and licensing change, new test cases as your DUT line grows, and scheduled reviews of your results. Ask when requesting a quote.
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Request a quote

Send us the DUT datasheet, or a copy of whatever you run today: a manual procedure, a legacy-platform configuration, a spreadsheet, even paper. We will sign a non-disclosure agreement covering any testing information you share with us. For a fixed \$300 fee we run the analysis and deliver the Integration Recommendations & Options report by email and US Mail, with a fixed quote for each deployment tier inside it.

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