

CASE STUDY

BSNL DEPLOYS PERTSOL'S iSECUREHL FOR PAN-INDIA IP LOG MANAGEMENT & DOT-COMPLIANT IPDR OPERATIONS



INTRODUCTION

Bharat Sanchar Nigam Limited (BSNL), India's state-owned telecommunications service provider, required a high-performance, probe-based IP Log Management (IPLM) solution to meet the Department of Telecommunications (DoT) IPDR compliance requirements across its nationwide IP broadband, FTTH, Wi-Fi, and leased-line networks. With exponential growth in IP traffic and increasing regulatory oversight, the organization needed a centralized, scalable, and future-ready platform capable of collecting, correlating, storing, and querying IPDR records at national scale. To address these requirements, BSNL deployed PertSol's iSecureHL – IP Log Management Solution as a pan-India, centralized IPDR platform, ensuring regulatory compliance, operational efficiency, and long-term scalability.

CHALLENGES

What critical problems needed to be addressed?

- ✓ Massive growth in IP traffic across 12 Internet Gateway (IGW) locations and multiple CGNAT nodes, generating tens of billions of IPDR records daily
- ✓ Mandatory compliance with DoT IPDR regulations, including 24 months + 1 month rolling data retention & future regulatory updates
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- ✔ Absence of a unified platform capable of providing pan-India visibility into IP session metadata
- ✔ Requirement for fast, accurate IPDR search & retrieval for Law Enforcement Agencies (LEAs) without impacting live network performance
- ✔ Requirement for a scalable architecture capable of supporting future bandwidth growth, regulatory updates, and increasing data volumes
- ✔ Long-term concerns around storage efficiency, and operational complexity

SOLUTION

What was implemented, and why?

Solution Implemented: PertSol iSecureHL – IP Log Management System

PertSol deployed iSecureHL as a **centralized, probe-based IPDR management platform**, designed to ingest, normalize, correlate, store, and query IPDR data across a nationwide network.

KEY ASPECTS OF THE IMPLEMENTATION INCLUDED:

- ✔ Centralized iSecureHL deployment at BSNL's Bangalore data center, aggregating pan-India traffic streams
- ✔ Integration with:
 - 12 Internet Gateways (IGWs) using probe-based collection
 - CGNAT servers across multiple locations
 - AAA servers, LDAP systems, Wi-Fi Core platforms, and BSNL's CDR-III CRM
- ✔ Layer-2 to Layer-7 decoding using probe-based traffic capture
- ✔ Near real-time correlation of NAT, subscriber, and session data to generate complete IPDR records
- ✔ Secure storage of IPDR data with advanced compression and encryption
- ✔ 25-month data retention (24 months + 1 running month) in full compliance with DoT mandates
- ✔ Web-based GUI and automated interfaces for IPDR search, extraction, and reporting by authorized agencies
- ✔ Built-in overload protection, encryption, audit trails, and unified network management for secure and reliable operations

The solution was architected for high availability, scalability, & regulatory evolution, supporting 10G / 100G links, multi-vendor network environments, and future bandwidth growth up to Tbps scale.

RESULTS

What measurable improvements did Tier-1 TSP achieve?

- ✔ 100% compliance with DoT IPDR regulations and future amendments
- ✔ Centralized management of 60+ billion IPDR records per day across TSP's pan-India network
- ✔ Processing capability of 500+ million IPDR records per hour per instance

- ✓ **High-performance IPDR search benchmarks**
 - 30 days of data scanned in under 1 minute
 - 12 months of data scanned in under 5 minutes
 - 24 months of data scanned in under 15 minutes
- ✓ Faster, more accurate IPDR extraction supporting law-enforcement investigations
- ✓ Reduced operational complexity through a single, unified IP Log Management platform
- ✓ Improved system reliability through active-active architecture, overload protection, & centralized monitoring



KEY HIGHLIGHTS

Problem	Solution	Impact
Pan-India IP traffic generating massive IPDR volumes	Centralized probe-based iSecureHL deployment	Unified national IPDR visibility
Complex correlation across probes, NAT, AAA & CRM	Real-time multi-source correlation engine	Complete, accurate IPDR records
Long-term regulatory data retention mandate	Advanced compression & SAN-based storage	25-month compliant IPDR retention
Slow and fragmented IPDR searches	Optimized search & query engine	Faster LEA response times
Future scalability and compliance risk	Modular, standards-ready architecture	Future-proof regulatory compliance

“As digital networks continue to grow, accountability depends on accurate IP activity records. Centralized IP Log Management provides the visibility needed to support regulatory compliance and authorized investigations with confidence.”