

# Linxus Internet Upgrades Secure Traffic Manager with Sonar V2 Integration

**FirstWave**



When billing systems and traffic enforcement fall out of sync, Internet Service Providers (ISPs) face frustrated customers, manual fixes, and operational risks. As Linxus Internet, a Weatherford, Texas ISP serving residential and business customers, prepared to migrate from Sonar V1 to Sonar V2, they needed certainty that their billing intent, subscriber state, and network enforcement would remain perfectly aligned.

FirstWave had developed a deterministic and auditable integration between Sonar V2 and FirstWave Secure Traffic Manager (STM), making Sonar the single source of truth and STM the single enforcement point. Already relying on STM to enforce rate plans and service policies, Linxus used this integration to eliminate uncertainty, automate enforcement, and ensure that every subscriber state change in Sonar immediately and predictably applied on the network.

As a result, STM has provided Linxus with accurate, automated enforcement with no manual intervention, no drift, and fewer support escalations. Rather than an operational risk, the Sonar V2 migration became a confidence-building upgrade.

## BACKGROUND

Linxus had long relied on a legacy integration between Sonar (their billing/account system) and STM (traffic enforcement), but indirect RADIUS behavior and inconsistent webhook behavior presented multiple challenges.

Subscriber state sometimes drifted between Sonar and STM, rate-plan changes didn't always update as expected, and accounts manually corrected in STM could remain out of sync.

Webhook behavior also added uncertainty as some events fired reliably, others didn't, and root causes were often unclear. Certain legacy hooks also appeared to not be functional.

When mismatches surfaced, the Linxus team had to recover reactively, relying on disruptive rewrite operations in Sonar that consumed time and money as well as increased operational risk. Edge cases like power outages, IP reassignments, customers with multiple public IPs, and bumpy delinquent-to-paid transitions could all result in enforcement states that didn't reflect billing reality.

While these issues were manageable individually, together they undermined the Linxus team's confidence that billing intent, account state, and network enforcement would stay aligned, especially during a major platform upgrade.

# | OBJECTIVES

Rather than treating the move from Sonar V1 to V2 as a simple technical necessity, they decided to set the bar higher.

Linxus wanted an integration that was deterministic and auditable – one where Sonar would be the unquestioned source of truth, STM would be the single enforcement point, and every subscriber state change would result in a clear, observable outcome on the network. Manual intervention needed to disappear, and confidence needed to increase as a result of this migration.

At the same time, FirstWave was designing and implementing a deterministic Sonar V2 integration, using Sonar webhooks and STM APIs to redefine how billing intent and traffic enforcement interacted.

# | SOLUTION

Linxus became the flagship STM customer to implement the STM and Sonar V2 integration APIs from FirstWave. To ensure long-term accuracy between Sonar and Secure Traffic Manager (STM), FirstWave's integration features a recurring reconciliation process that continuously validates subscriber enforcement state.

The process performs two critical checks:

## **Sonar-to-STM coverage validation:**

Confirms every Sonar subscriber public IP that should be controlled is present in STM, ensuring STM can enforce the intended service plan.

## **STM-to-Sonar drift detection:**

Identifies stale STM host entries created by real-world public IP churn and supports safe cleanup of orphaned objects.

FirstWave's solution delivered Linxus a deterministic and auditable integration that removed uncertainty from billing-to-network enforcement.

FirstWave's STM integration uses Sonar V2 webhooks to capture every meaningful subscriber change—account creation, service-plan updates, billing and delinquency events, and public IP assignment changes—and immediately translate those events into enforcement actions through STM APIs.



STM applies the correct rate plans in real time, enforces delinquent and inactive policies consistently, and maintains enforcement accuracy for customers with multiple public IPs. Because enforcement is explicit and event-driven, subscriber state changes are applied as they occur, without delay or ambiguity.

This approach eliminated the need for manual STM edits, disruptive Sonar “rewrite” operations, and reactive support tickets. Enforcement behavior became predictable, repeatable, and observable rather than corrective.

With runtime reduced to approximately two minutes per cycle, Linxus can now schedule reconciliation every four hours (or more frequently), maintaining consistent alignment between billing intent and network enforcement as subscriber IP assignments change.

## | RESULTS

The impact of this integration for Linxus was immediate and lasting. Billing intent is now enforced accurately and in real time, without manual STM edits or disruptive recovery workflows. Delinquency and reinstatement also happen automatically, and service changes are reflected on the network as they occur.

Support tickets related to enforcement mismatches have dropped, easing pressure on support and NOC teams. More importantly, confidence increased during the Sonar V2 migration; Linxus can now make changes knowing the network will respond predictably, even during outages, IP churn, or complex subscriber scenarios.

For Linxus Internet, the Sonar V2 migration became a turning point toward a cleaner, more resilient operating model. For other ISPs facing similar transitions, This story shows how a deterministic and auditable integration between billing and traffic enforcement reduces risk, simplifies operations, and improves customer experience – and how achievable it is with FirstWave Secure Traffic Manager.

