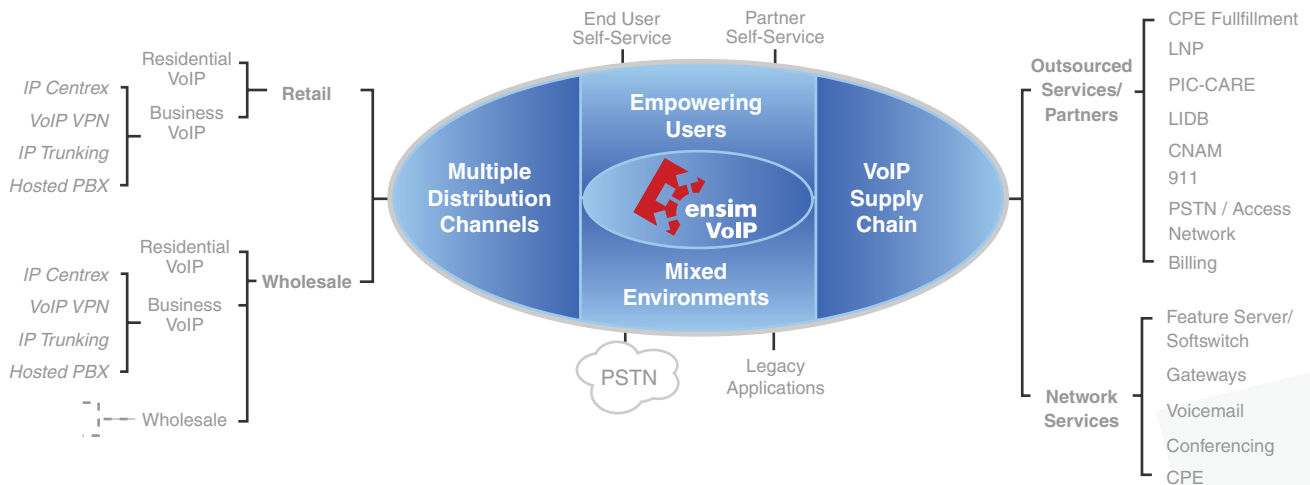


Key Drivers for Ensim VoIP

Ensim VoIP solves the critical customer pains and barriers to rapid, scalable and ultimately successful hosted VoIP deployments. Leveraging Ensim VoIP, the Carrier is empowered to go to market with a highly competitive and full featured offer, while simultaneously meeting critical time-to-market needs — two requirements that are typically in conflict with each other. By addressing four key areas — enabling self-management, automating the VoIP supply chain and network topology, leveraging mixed and legacy environments, and supporting key distribution channels, Ensim VoIP pulls together the people, process and technology required to make any hosted VoIP deployment seamlessly and scalably operate as a system.



Empower Customers and Partners with Self-Management

With the promise of VoIP applications come significantly higher customer and partner (reseller) expectations for the self-management and customization of their communications applications. Service providers are challenged to scale the business while simultaneously minimizing service delivery cost and CSR interaction; the use of self-management tools to accomplish this is paramount to the success and profitability of VoIP applications. To support these requirements, Ensim VoIP provides a full featured web-enabled service ordering, account management, telephony feature management, messaging and call management environment integrated with automated and real-time back office processing.

Automating Complex VoIP Supply Chains

Today's hosted VoIP environments include a mix of internal network services in combination with select outsourced service partners that collectively comprise the VoIP Supply Chain. Successfully delivering hosted VoIP services requires a complex and seamless orchestration of these resources, driven by the real-time and robust self-management requirements of the customer and partner. Ensim VoIP is specifically designed to address these challenges, providing built-in support for the required processes, a robust adapter framework to integrate diverse suppliers, as well as the reporting and monitoring tools to visualize and manage this complex supply chain.

Remove Complexity from Mixed/Multi-Vendor Environments

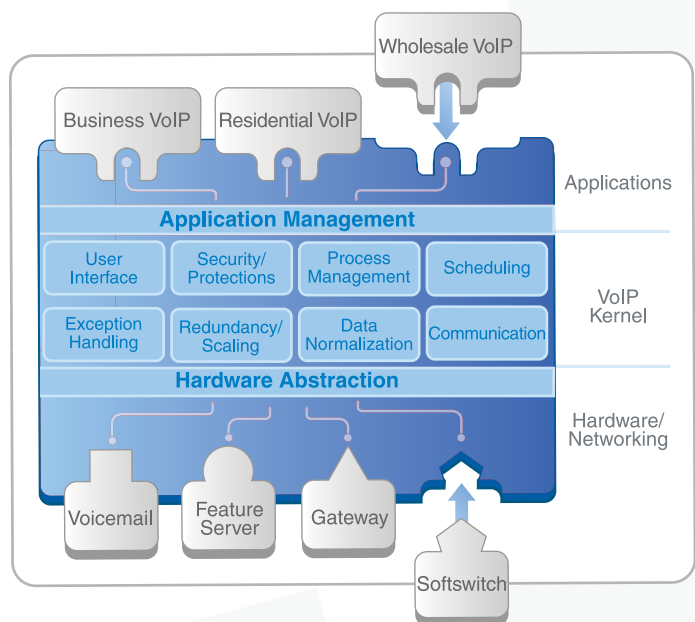
The reality of today's telecom environments is a collection of legacy and next-generation infrastructure. Adding to this complexity, within the VoIP domain, multiple vendors supply various components of the solution, or even multiple vendors supply the same component (e.g., multiple softswitches deployed within a network). Implementing a coordinated delivery process across such a mixed network, with multiple points of integration, becomes difficult, if not impossible. Ensim VoIP removes this complexity with pre-packaged and certified support for best-of-breed vendors, essentially removing the “integration tax” burden and risk from the Carrier. Moreover, Ensim VoIP provides robust integration capabilities for resource abstraction and integration, specifically designed to support and interoperate with existing systems. Service providers are able to leverage their existing infrastructure investments, and seamlessly introduce new technology, all while maintaining a coordinated and consistent process across their organization.

Securely Enabling Key Distribution and Sales Channels

Also important, is the enabling of key sales and distribution channels — whether the Carrier is supporting a Retail model selling VoIP applications directly to end customers, a Wholesale model selling VoIP applications through Resellers, or a combination of Wholesale and Retail applications. Each of these models have unique and non-trivial security requirements that must be ensured and enforced. For example, the Wholesale model must support secure partitioning of the system such that the Carrier can host multiple competing Resellers. In addition, the Wholesale model must also support NxN growth whereby Resellers can in turn be Wholesalers to other Resellers, while maintaining the security and integrity of the partners across the system. Ensim VoIP supports all distribution models as well as any combination thereof, providing the service provider with the flexible growth and business expansion options they need, should their business requirements change.

Ensim VoIP Architecture

Ensim VoIP is divided into three logical layers, each performing a critical role in the deployment and delivery of hosted VoIP services: Application Management; VoIP Kernel; and Hardware Abstraction.





Ensim VoIP White Paper

Application Management

The Application Management layer provides a standardized platform for the deployment, delivery, active management (post-deployment) and evolution of VoIP applications. Ensim VoIP bundles an out-of-the-box base-level set of support for common services such as Business VoIP (IP Centrex, VoIP VPN, Hosted PBX, etc.), Residential and Wholesale VoIP, which can then be quickly extended and/or adapted to the specific requirements of the customer environment. In addition, third party developers can leverage a powerful Integrated Development Environment (IDE) and a common application programming interface (API) to rapidly deploy any number of additional service offers to create the "sticky," user-centric applications that differentiate service providers and make the most of market opportunities. Most importantly, operators can be assured that the abstraction layers within Ensim VoIP isolate applications from network changes, and vice versa, simplifying management and change.

VoIP Kernel

Ensim VoIP features a kernel which supplies the OS with core processing and management capabilities. However, unlike other solutions, each process within the VoIP Kernel is specialized for the unique requirements of VoIP. A typical VoIP application spans numerous components including: Customer Premise Equipment such as IP phones and ATAs; network interconnection technology such as media gateways, signaling gateways and session controllers; VoIP application technology such as feature servers, softswitches and media servers; and traditional back office systems such as billing, provisioning, order management and assurance. Recognizing the need to touch many, if not all, of these resources to deliver VoIP applications, Ensim VoIP provides a robust, XML-based communications environment along with a library of pre-built adapters to popular VoIP components, as well as pre-defined building blocks supporting common transport protocols such as SNMP, HTTP, CORBA, Java and SQL to facilitate rapid adapter creation. Support is also provided in

the kernel for the management of DID inventory, product catalog, E.911, and Local Number Portability functions.

Hardware Abstraction

The VoIP topology presents a complicated mix of components — legacy and next generation, multiple vendors, customer premise and network based — all of which must be integrated, orchestrated and managed. The hardware and network abstraction provided by Ensim's solution assures service providers of the interoperability of certified components with their VoIP applications. With Ensim VoIP, service providers are now able to deliver a consistent application experience across multiple technology vendors, as well as modify existing applications and develop new ones without impacting underlying infrastructure. In addition, service providers can make changes to the underlying technology choices, partners and equipment without affecting existing applications.

Ensim VoIP Inside

- User Interface** - Provides centralized control and self-service management
- Security** - Enforces security policies, access, partitioning and authorization
- Process Management** - Best practices optimized to manage and automate VoIP flow-through and automation
- Scheduling** - Enables scheduled and repeat service delivery activities
- Exception Handling** - Error handling, rollback, change order management for VoIP
- Redundancy/Scaling** - Logical and physical server scaling, failover, redundancy
- Data Normalization** - Mediates complex data exchange between legacy and next-generation components
- Communication** - Robust protocol and adapter support to facilitate exchange and automation across the VoIP network topology and supply chain
- VoIP Built-In Functions** - Telephone number management, product catalog, E.911 and Local Number Portability



Ensim VoIP White Paper

Ensim VoIP Benefits

Ensim VoIP brings consistency, reliability, openness, standardization and simplification to VoIP environments. Service providers deploying hosted VoIP applications realize the following benefits from Ensim's solution:

Partner Ensim VoIP Certification

Leveraging over five years of VoIP experience, Ensim customers can rest assured that an Ensim VoIP certified product will reliably work and be supported, effectively removing the "integration tax" and support burden from the Carrier. Ensim certifies the interoperability of VoIP components in its development labs based on customer requests and its product roadmap. These include softswitches, feature servers, IP phones, analog telephone adapters, unified messaging and voice mail applications and OSS applications such as billing, assurance and inventory. Service providers depend on the assured device and system interoperability Ensim provides for Ensim VoIP certified components. If you feel your product's certification would add value to VoIP deployments, please contact Ensim for more details of the certification program.

Dramatically Scale Operations

Service providers seeking to make the most of the growing VoIP market opportunity need to achieve national and international scale while minimizing the cost to support a growing customer base. The Ensim VoIP solution provides a standardized process management architecture to automate VoIP service delivery processes across legacy and next-generation infrastructure, enabling a highly scalable and fully automated VoIP flow-through service delivery system.

Rapidly Deploy Hosted VoIP Services

The VoIP OS introduces a layer of abstraction between hardware/network implementations and applications, as well as provides common integration, business logic processing and presentation services. Product management and business analyst

personnel can create services and design business processes, as well as support ongoing change and evolution, with confidence that underlying infrastructure components will support their designs. Conversely, network managers and systems analysts can update network architectures without impacting existing applications and/or the customer experience. Ensim VoIP includes a graphical integrated development environment to facilitate rapid design and deployment activities.

Automate the Backoffice

Hosted VoIP applications bring increased complexity, higher user expectations, and the potential to consume top-talent employees' bandwidth with labor-intensive processes. A focus on eliminating costs and driving operational efficiencies can be the difference between success or failure with VoIP service offers. Ensim VoIP combines an automated, process management capability that can be extended to every resource involved in service delivery, with pre-defined, VoIP-specific business process logic. Service providers benefit from Ensim's extensive domain expertise and best practices, embedded in a standardized software platform, that can be applied to any VoIP business.

"SunRocket is keenly focused on providing the best possible experience for our customers. Ensim's comprehensive solution allows SunRocket to integrate our technology and service providers into a cohesive, seamless operation, providing full automation of an otherwise complex service establishment process. Ensim essentially provides the glue that bonds together our best-of-breed technology partners, allowing us to cost-effectively scale while enabling highly-efficient provisioning, operations and customer care."

SunRocket, Robert Mainor, Co-Founder and COO

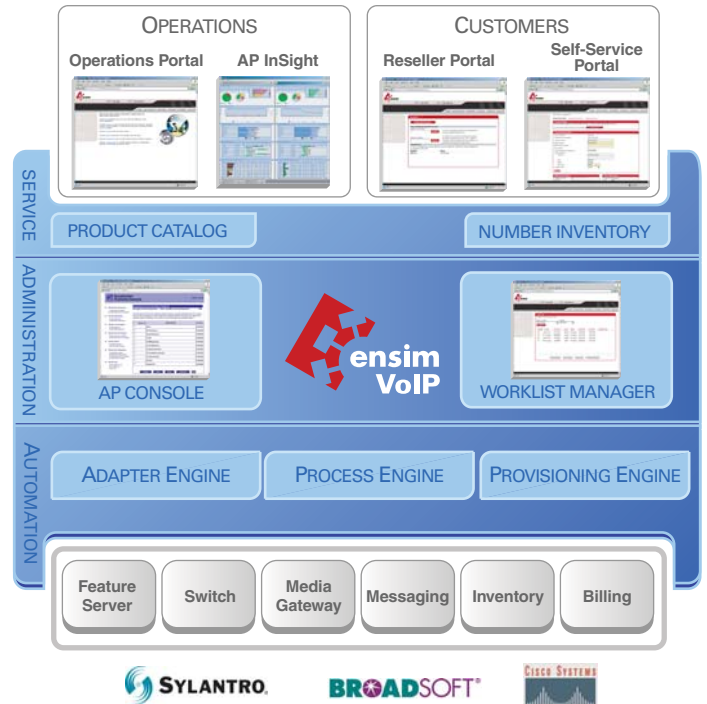


Ensim VoIP White Paper

Assuring Your Success with Ensim

Softswitches and other VoIP independent equipment vendors provide robust tools for managing the attributes and parameters of their individual device and domain. However, delivering VoIP applications demands much more. In fact, successfully delivering VoIP applications requires a complex orchestration of multiple systems, devices and processes spanning a service provider's entire internal infrastructure and external partners. Cognizant of this challenge, Ensim VoIP takes a holistic view to the creation, deployment, and delivery of VoIP applications, with capabilities to manage delivery processes across the entire infrastructure.

Ensim VoIP also provides a complete VoIP customer user interface for full self-management of VoIP applications including self-ordering, account management, telephony feature management and call management.



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