



Sigma Systems
The Service Management Leader

PRODUCT PORTFOLIO OVERVIEW

Introducing Sigma Systems — Trusted, Proven, Deployed



Corporate Background

Sigma Systems is the proven global leader in subscriber policy management and fulfillment solutions. These solutions enable Communications Service Providers' (CSPs) to rapidly create and deliver an infinite number of subscribed and on-demand services and applications.

Sigma's award-winning solutions help CSPs deliver converged voice, data/internet, video, premium content, and collaboration services across any device, any network, any time, and any where - defined as Sigma All Play. All Play is the next generation of integrated service configuration, subscriber policy management, order management and converged services delivery, bringing together multi-technology networks and automating the fulfillment of integrated services for residential or business users. Sigma's proven software provides CSPs with the pre-integrated solutions for voice (circuit switch, VoIP, SIP, cellular voice), video (IPTV, DTV, ITV, VOD, PPV), data (DSL, HSD, mobile and WiFi/WiMax data), and also support converged service delivery architectures.

Sigma is pioneering the evolution to "Applications Enablement" where value-added services can be quickly on-boarded and CSPs can rapidly monetize their IP network. Enablement includes service orchestration - where subscriber policy management, authorization and entitlement processes, and business rules are managed and openly available for real-time service delivery.

Sigma Systems' superior OSS products and solutions empower CSPs to decrease time to market, lower operational costs, deploy new revenue generating services/applications, decrease customer care costs and deliver subscriber service personalization through self-care integration and automated service fulfillment.

Sigma's executive team has over 80 years of combined OSS, IT and telecommunications industry experience. This team is revered as industry experts and are routinely featured in thought-leadership seminars, events, and conferences around the globe.

Sigma's heritage includes over 11 years of proven solution delivery experience in multi-service, multi-technology operating environments. Today, Sigma manages over 50 deployments for communications service providers with a combined total of over 30 million subscribers worldwide. Sigma's tried, proven and trusted deployments are supported by its team of over 350 dedicated professionals, across the Americas, Europe, India and Japan, who design, develop, sell and deliver Sigma's products and services.

Product Overview

The Sigma™ Product Portfolio is the brand name for the entire Sigma OSS product line. The Sigma Portfolio, consisting of cutting-edge OSS service management products, is used for delivering next-generation network services and premium applications on cable, wireline, wireless and other IP broadband networks. The portfolio encompasses a broad array of functions including order management, service provisioning and activation, business process and workflow management, resource management, service authorization, as well as subscriber self-service and customer care service diagnostics functionality.

The Service Management Portfolio is comprised of these product line categories:

- Sigma Service Management Platform
- Sigma Service Management Applications
- Sigma Service Creation Environment
- Sigma Service Management Solutions
- Sigma Service Activation Manager
- Sigma Device Provisioning Manager

Sigma's award winning and 4th generation Service Management Platform (SMP), powered by ServiceBroker™ a real-time intelligent service control and orchestration engine, is an end-to-end J2EE based Platform architecture that is proven to support millions of managed subscribers.

Built on SMP, Sigma Service Management Applications are value added products which are widely used by IT personnel, network engineering, product marketing, call center representatives, end-user/company administrators and end-users from some of the world's leading broadband service providers. Sigma Service Management Applications facilitate service order capture, self-subscription/self-care, service topology management, telephone number management, company administration for business VoIP services and call center service diagnostics.

The Sigma Service Creation Environment consists of the Service Creation Toolkit and Service Catalog Manager for the creation and configuration of access network and enabling over-riding application-based services, business rules/policies, application and service orchestration and workflow-based operations processing logic. The Service Creation Toolkit allows for the creation or modification of provisionable services, and the configuration of adapters and workflow templates. The Service Catalog Manager enables the definition of orderable services and complimentary applications, packaged bundles and service tier migrations to reduce the time and complexity of enabling new ARPU for CSPs.

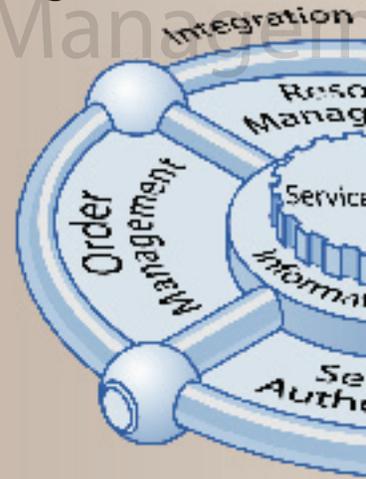
Sigma Service Management Solutions are configured on top of SMP and are managed by market vertical (Cable,

Wireline and Wireless) and specific service categories (e.g. residential and commercial VoIP, digital video/TV Solutions - MSO/Telco/xISP/xVNO), IMS Solutions - Fixed-Mobile Convergence and more). These Solutions support integration to leading communications technologies and residential/business service classes including: NCS and SIP telephony, broadband wireless data service, high-speed fixed data (DOCSIS and DSL), ISP services, and mobile services (e.g. 1x, iDEN, CDMA, PCS, EV-DO), and as well as analog, digital and IPTV video services. Sigma Service Management Solutions also include specific products to provide point-solutions for the management of commercial and residential VoIP services.

Sigma Commercial Voice Hosted SMB Service Package provides a robust OSS service management solution that is pre-integrated to define, provision, and maintain voice services on a broadband IP network. The Sigma Commercial Voice Hosted SMB Service Package™ allows the quick optimization and automation of operational processes for voice services. It can rapidly create new bundles of commercial services, including hosted voice service, voice mail, unified messaging and call features.

Sigma's Service Activation Manager (SAM) provides significant business and operational benefits for small to mid-size Broadband Service Providers with its service activation, device provisioning and IP management solution. The SAM solution is an industry leading OSS product that automates the provisioning lifecycle - from subscriber equipment qualification through customer support and integrates all layers of the IT infrastructure, including OSS/BSS integration, order entry, service activation, HSD/ISP customer self-care, and network and service assurance. In addition, SAM provides a solution for deploying DOCSIS™ high speed data/internet services, PacketCable™ based residential VoIP and digital video services in a single, robust and highly scalable OSS system.

The Sigma Service Management Platform



Sigma Service Management Platform

The Sigma Service Management Platform (SMP) is the cornerstone of the Sigma product portfolio and delivers key functional capabilities required for service management. Those capabilities include order management, resource management, provisioning & activation, service authorization and ServiceBroker™ - an intelligent service control engine, which provides SMP's intelligent process control and a BPEL compatible high performance workflow engine.

The Service Management Platform can:

- Manage the automated provisioning and activation of complex service bundle orders that can include complimentary application services
- Maintain a comprehensive and up-to-date view of the subscriber's service profile
- Provide order management include order decomposition and validation, order status and history, concurrent orders and order dependencies
- Support subscribed, one-time, on-demand and event based services
- Manage service resources and related network/service topology
- Automatically determine the workflows that must be executed to provision and activate a network service/s and enable access to a CSP and/or 3rd party's applications
- Define & maintain a unified view of the user's identity via API integration to external systems like AAA, HLR, HSS, and presence and location base services
- Integrate to external customer care/CRM/BSS systems for order capture (via API)
- Integrate to multiple network elements and OSS systems as required to instantiate a service
- Authenticate and authorize subscribers, CSRs and operations staff, as well as authorize service usage and service entitlements

SMP's Integration Framework provides industry standard APIs and adapters to facilitate integration with existing BSS, OSS, NMS and network/service platforms.

SMP's ServiceBroker's™ Intelligent Process Control leverages its federated service management information model to automatically determine the processes needed to instantiate a service request. It enables the management of complex workflow processes including scheduling, dependency management, manual and automated tasks, priority and jeopardy management, rollbacks, mid-order status updates, and cancellations.

The Service Management Platform can abstract the services from underlying service delivery platforms, which provides service providers with the flexibility to change network and service platforms vendors, while minimizing any impact to services.

Sigma Service Management Applications

Built on the SMP, Sigma Service Management Applications are value-added products that facilitate service ordering, self-subscription/self-care, network topology maintenance, and service diagnostics.

Service Profile Manager (SPM)

Customer Service Representatives use SPM to capture the necessary subscriber, account and service information needed to process a service order for broadband IP services such as video, voice and high speed data. SPM also provides a user interface to track and manage the entire lifecycle of service orders.

Client Service Center (CSC)

Client Service Center provides a web-based portal and set of APIs that enables subscribers to self-subscribe to services. It offers the ability to self-manage voice and HSD/ISP services including add/delete features, email account administration, web-hosting administration, personalization of feature preferences and related parameters. CSC APIs are available to integrate external web portals to the Sigma SMP Platform to automate self-subscription and self-care processes.

Service Topology Manager (STM)

STM models and manages the relationship between subscribed services and the underlying network elements and resources. STM is used to determine and track the specific network/service elements and resources used to deliver a subscriber service. STM assists network engineers in ensuring that the service topology is up to date. STM can model the physical and logical resources used to deliver services, and can automatically re-provision services when required due to network changes.

MyOffice Voice Manager (MVM)

MVM is an administrative application that helps commercial VoIP customers manage enterprise subscribers, account information, and service features. This robust management software enables enterprise administrators to easily manage their VoIP services and subscribers and offers added value for commercial VoIP providers.

SIP Device Manager (SDM)

SDM provides key automation and uses pre-built device templates to automatically add, configure and provision SIP devices for commercial and residential VoIP services. Sigma SIP Device Manager provides rapid deployment of SIP devices including ATAs, IADS, SIP phones and SIP soft-phones. This ability to add devices "on-the-fly" removes many error-prone manual processes and can significantly improve the initial subscriber experience.

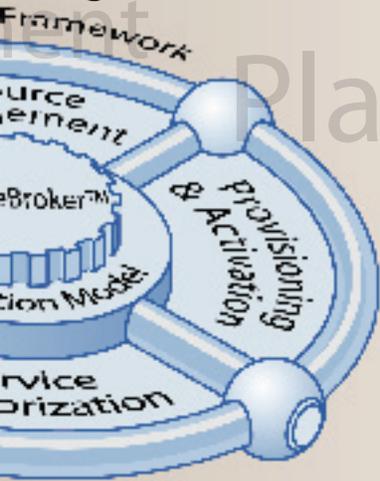
Advanced Diagnostics Manager (ADM)

Sigma ADM is an application for customer call centers that troubleshoot and resolve service problems for voice, HSD and video services. ADM can be used stand-alone or in conjunction with SMP. It provides a web-based intelligent scripted diagnostic TSR interface that incorporates automated tests, information retrievals, and questions for subscribers. This automatically guides the TSR through a subscriber problem call in order to resolve service problems correctly, in the least time possible.

Telephone Number Manager (TNM)

Sigma Telephone Number Manager (TNM) application includes a GUI management interface to add, update and delete blocks of telephone numbers and reporting to track utilization and replenishment of TNs. A fully defined API allows third-party order entry systems to query and reserve telephone numbers for voice service orders. The API also allows the Sigma SMP to initiate telephone number state changes throughout the entire customer service life cycle.

Management Platform



Sigma Service Creation Environment

Sigma's Service Creation Environment provides GUIs and tools to enable the rapid creation or modification of services and service bundles, and the addition or modification of service platforms.

Service Creation Toolkit (SCT)

The Service Creation Toolkit provides the Service Provider with a powerful set of GUIs and tools to configure and modify base provisionable services, technology cartridges and adapters, business rules and workflow processes using this Toolkit.

Service Catalog Manager (SCM)

SCM provides Service Providers with the ability to quickly define new orderable services, and modify existing services based on base provisionable services defined in SCT. The Sigma Service Profile Manager or a higher-order customer care and billing system can be used to capture orders for these services. Using SCM, Service Providers can define the relevant service parameters, dependency rules, and availability criteria as it pertains to services to be ordered and billed. SCM also enables users to define service bundles, when services are available and expire. SCM has importing and exporting capabilities allowing online updates to the service catalog, and can also be used to configure migrations (upgrades and downgrades) between service bundles/tiers.

Sigma Service Management Solutions

The Solutions for broadband IP and wireless networks offer pre-integrated solutions that incorporate extensive domain expertise along with service definitions, service topology models, provisioning and activation workflows, and adapters for a wide variety of popular service delivery platforms.

Sigma Tiered High Speed Data Service Package provisions high-speed data access to IP broadband modems.

Sigma ISP Service Package manages email, web-hosting and domain name registration.

Sigma's Wireless Service Package delivers advanced voice and data services like push-to-talk, messaging, gaming, wireless web and streaming audio/video, over CDMA/1X, 2G, 2.5G, 3G, iDEN, RIM and PCS networks.

Sigma's Residential Voice Service Package provisions dial tone access, voicemail, calling features, long distance choice and CLEC inter-carrier integration over VoIP networks (SIP or NCS enabled).

Sigma Commercial Voice Hosted SMB Service Package™ provides a robust OSS service management solution to define, provision, and maintain voice services, for small and medium sized businesses.

Sigma's Digital Video Service Package provision basic video subscriptions as well as on-demand services like pay-per-view, video-on-demand, while supporting converged applications (e.g. caller ID over TV, unified messaging) to a digital set-top box.

Sigma Service Management Solutions cont'd

In conjunction with its partners, Sigma also offers a variety of broadband IP service packages for malicious attack/virus, denial of service, privacy & security, premium content access, bandwidth usage management and bandwidth-on-demand.

Sigma Provides Pre-Configured Support in its Service Packages for these types of services:

- VoIP: PacketCable and SIP-enabled telephony with voice service, Rate Center, LNP and CNAM support, long distance choice, inter-carrier ILEC/CLEC gateway integration, voice mail, unified messaging
- Wireless Voice: packet voice, PCS voice, iDEN voice, voicemail, prepaid voice, PTT (push-to-talk)
- Data/Internet: Tiered high-speed data access, email, web-hosting and domain name registration, ISP services
- Wireless Data/Internet: iDEN Dispatch, iDEN Enterprise Packet Data, CDPD, 1X Tethered (wireless modem), Prepaid Data; PCS micro-browser packet data, iDEN micro-browser packet data, managed IP, wireless web, MMS multimedia messaging; SMS/text messaging, RIM, paging, EV-DO enabled premium content downloads
- Premium Broadband: Enabling authorized access to security and privacy (firewall, parental control, virus), premium content (gaming, news, photo, entertainment) and bandwidth on-demand
- Video Services: Subscription digital video services and authorized access to premium HSD services on advanced set-top boxes (e.g. DTV, IPTV, PPV, IPPV, VOD)

Surpass



Sigma Systems
The Service Management Leader

55 York Street
Suite 1100
Toronto, Ontario, Canada, M5J 1R7
Tel: +1.416.943.9696
Fax: +1.416.365.9227
corporateinfo@sigma-systems.com
www.sigma-systems.com

Sigma Service Activation

Sigma's Service Activation Manager (SAM) enables small to medium-sized broadband service providers to increase their revenues by easily delivering new HSD services that leverage DOCSIS™ 1.1/2.0 and tiers of service with applied quality of service (QoS) levels. Broadband Service Providers face difficult choices on how best to upgrade their OSS investment to offer new broadband IP services. They need scalable and flexible solutions that enable them to rapidly deploy new revenue-generating services with minimal costs and changes to the existing infrastructure.

Sigma's SAM consolidates some of the most critical aspects of operational support systems and the back office into an integrated OSS product offering that includes order entry, OSS/BSS system integration, service activation, device provisioning, IP address management and value added service assurance tools.

Sigma's SAM includes the Sigma Device Provisioning Manager (DPM), a complete DOCSIS™ and PacketCable™ device provisioning system. DPM includes Sigma's integrated PacketCable SNMPv2/3 stack and DHCP, TFTP, ToD servers for quickly adding cable modems and embedded MTAs (e-MTAs) to a broadband service provider's network. Sigma's DPM can be licensed in conjunction with Sigma's Service Management Platform to provide a comprehensive service management and device provisioning solution that can scale to support millions of subscribers.

Benefits

The Sigma Product Portfolio delivers five key benefits to Communications Service Providers:

- 1 Increase their ability to leverage their current network and service platforms to deliver new revenue generating services and premium applications
- 2 Effectively reuse their service and application assets for converged service delivery
- 3 Decrease their time to market for new services
- 4 Substantially lower their operational costs associated with the deployment and on-going management of their services
- 5 Increase customer satisfaction due to improved order-to-delivery intervals, and customer empowerment via self-care integration and the unified walled garden experience

Why Sigma

Since the mid-90s, Sigma has been defining the state-of-the-art for new services fulfillment over multi-technology networks. Sigma's portfolio of solutions is proven, trusted and deployed in leading IP broadband and wireless service providers in North America, Europe, Caribbean-Latin America and Asia Pacific.

Sigma is recognized as an OSS service management leader because of our technology expertise, skilled engineering and deployment teams and exceptional customer references. We are true experts in the consultation, introduction and deployment of OSS solutions backed by our highly recognized global customer list. With a proven ability to manage premium broadband services, including the converged multimedia offerings of multi-technology networks and voice, video & data services for emerging wireless mobility networks, Sigma enables CSPs to tap into new markets and attract new revenue streams. Sigma has an:

- Extensive number of Voice over IP telephony deployments – over 20 to date
- Proven, trusted and deployed to scale to millions of subscribers managed – total of 30 million subscribers managed to date
- Triple play and Quad play deployment experience with a standards-based Platform to manage the evolution to a world of hyper-connectivity with anywhere service and application consumption and usage
- Proven ability to manage premium broadband services, including the converged multimedia offerings of multi-technology networks
- Proven ability to manage voice and data services for cellular and emerging broadband wireless networks