

MetaSolv Activation on Foundry Devices

END-TO-END PROVISIONING WITH METASOLV IP SERVICE ACTIVATOR

The demand for IP-based services such as VPNs, Voice over IP (VoIP), IPTV, video conferencing, and hosted applications is driving explosive growth in the amount of IP traffic traversing global communications networks. These new services offer significant revenue opportunities for the service providers who operate these networks. Operators must differentiate their service offerings and enhance the customer experience in order to retain customers and grow revenues. Streamlining the provisioning process is critical to achieving faster time to market and providing the flexibility to deploy new services in this rapidly converging environment.

Foundry Networks and MetaSolv Software offer a cohesive, best of breed solution that effectively addresses these challenges, and enables service providers to expand revenues by offering highly differentiated IP, MPLS, and Ethernet services. MetaSolv IP Service Activator for the Foundry devices enables efficient Carrier Ethernet deployments with support for Layer 2 VPNs, Layer 3 VPNs, VLANs, and policy-based services.

ENABLING ONE TOUCH ACTIVATION OF IP SERVICES

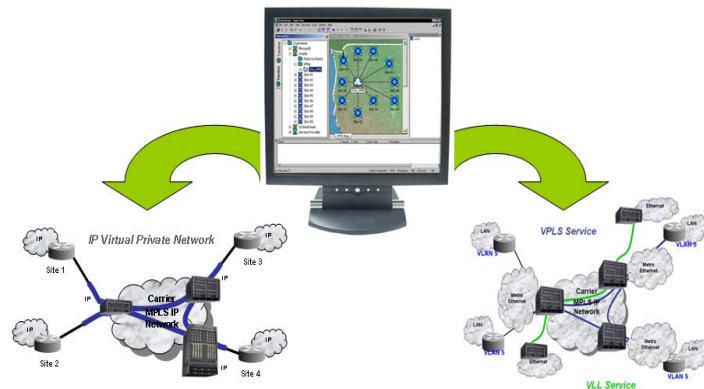
MetaSolv IP Service Activator (IPSA) enables rapid and efficient provisioning of complex IP-, MPLS-, and Ethernet-based services in networks powered by Foundry Networks' routers and switches. This solution delivers rapid, high-reliability activation, advanced configuration auditing through stateful service management, network auto-discovery, as well as powerful policy-based configuration management.

Service Activator's capabilities help providers:

- Manage a variety of advanced services, including MPLS Layer 2 and Layer 3 VPNs, QoS, and Ethernet VLANs
- Perform flow-through provisioning across multiple service domains
- Perform effective service creation and design by leveraging the capabilities of the underlying devices
- Implement effective policy management
- Perform real-time service deployment, respond to customer requests in real time, and shorten the time to bring new services to market
- Manage the complexities of distributed networks and systems
- Integrate effective OSS and business critical systems including billing, performance management, and fault management
- Manage equipment from multiple vendors

IP Service Activator provides:

- **Out-of-the-box deployment**
- **Automatic network discovery**
- **Intuitive user interface**
- **Drag & drop service creation**
- **Superior service management**
- **Dramatically reduced order fall-out**
- **Network or customer wide changes**
- **Configuration optimization**
- **Configuration auditing**
- **In-built support for Foundry's MPLS routers and VLAN aware switches**
- **Multi-vendor equipment support**

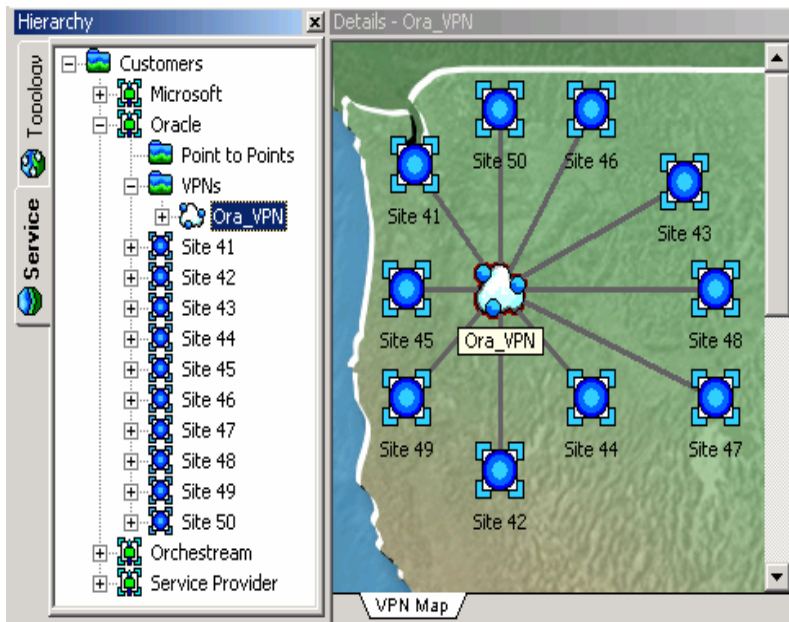


MetaSolv IP/Ethernet Activation enables provisioning across complex convergent networks

CONNECTIVITY/VPN BASED SERVICES

Service Activator uses an intelligent policy-based engine to generate a detailed model of the managed network along with the features supported by the devices in that network. Based on these reported capabilities, an administrator can then configure Virtual Private Networks (VPNs), manage Quality of Service (QoS) policies, and apply services from a single point of control. The system translates the administrator's service and policy definitions into the device-specific configuration commands needed to implement the requested services. Distributed, intelligent device drivers then update all relevant devices throughout the network in real time, thereby simplifying the implementation and day-to-day management of network services.

IP VPNs are becoming a key service offering that service providers must deliver to remain competitive. However, VPNs can be rather complex and time-consuming to configure manually, especially in multi-vendor network environments. IP Service Activator makes it easy to set up VPNs, and add or amend customer sites as required via an intuitive graphical user interface. All network elements in the VPN can be rapidly configured in just a few minutes.



MetaSolv IP Service Activator features a drag and drop interface to simplify VPN creation.

Service Activator supports the following services:

- **Layer 3 MPLS-based VPN** – Service Activator supports the established IETF standard (RFC 2547bis) for Layer 3 VPNs, with eBGP and other Provider Edge (PE)-Customer Edge (CE) routing protocols, which allows for scalable VPNs with secure distribution of end-customer private routes.
- **Layer 2 Virtual Leased Line (VLL)**– Service Activator supports point-to-point Layer 2 MPLS VPNs based on the IETF Pseudo-Wire Emulation Edge-to-Edge (PWE3) drafts. A Virtual Leased Line is a pseudo-wire (or tunnel) configured between two endpoints across an IP network and allows for layer 2 service inter-connectivity across an IP backbone
- **Virtual Private LAN Service (VPLS)**– Service Activator automatically establishes device peering, and configures all relevant network devices in a Virtual Private LAN Service (VPLS), which provides multi-point connectivity for Ethernet LAN segments across an MPLS network.
- **VLAN** – Service Activator allows the activation of VLANs within a metro Ethernet network. Such activation can either be done stand-alone or in conjunction with other service types described above.

SYSTEM REQUIREMENTS

Oracle Database Server (required)

All Service Activator implementations require the services of an Oracle Database Server. However, Service Activator does not require that the target Oracle Server be a standalone server. Service Activator will function when connected to an Oracle Server that is supporting other, non-Service Activator applications. MetaSolv strongly recommends against co-locating the Oracle Server and any Service Activator components on the same host machine.

Typical Requirements

Hardware Recommendations and Deployment

- One Sun Fire V240, dual 1.2 GHz CPUs, 8 GB RAM, 72 GB hard drive
- Windows desktops, single 2 GHz CPU, 1 GB RAM
 - o Service Activator User Interface (GUI)
- Number of Devices Supported: 1 - 1500
- Number of Service Activator Servers: 1 + 1 Oracle Server
- Number of Supported Users: 3

COMPLEMENTARY CAPABILITIES OF FOUNDRY ROUTERS AND METASOLV IP SERVICE ACTIVATOR

NetIron XMR, MLX and IMR features	IP Service Activator Features
<p>MPLS L3 VPNs RFC 2547 bis, an architecture for scalable VPNs that uses MPLS for packet forwarding and BGP to distribute private routes</p>	<ul style="list-style-type: none"> • Full support for RFC 2547bis MPLS VPNs • Provides drag-and-drop or flow-through creation and modification of MPLS VPN services • Supports auto-creation and management of VRF tables, Route Target (RT) and Route Distinguisher (RD) numbers • Provides multi-protocol support (eBGP, OSPF, RIP, Static) as the Provider Edge (PE)-Customer Edge (CE) protocol
<p>VPLS (Virtual Private LAN Service) Transparent LAN Service, MPLS-based multi-point Ethernet connectivity between two or more provider edge routers, based on the LDP VPLS specification¹</p>	<ul style="list-style-type: none"> • Supports Ethernet and Ethernet VLAN-based VPLS • Automatically manages VPLS instances • Provides single-task activation for automatically adding a new VPLS site, and auto-configuring “all” PEs and VPLS instances involved in the VPLS
<p>VLL (Virtual Leased Line) Point-to-point Ethernet over MPLS connection between two provider edge routers, based on the PWE3 specifications²</p>	<ul style="list-style-type: none"> • Supports untagged Ethernet and tagged Ethernet based MPLS VLL services on Foundry devices • Auto-configures both endpoints of a VLL in a single request
<p>VLAN 802.1q VLAN switching for Metro Ethernet networks</p>	<ul style="list-style-type: none"> • Supports VLAN management over Layer 2 Ethernet switching networks • Provides automatic VLAN creation and assignment/de-assignment of ports • Support for tagged and untagged traffic • Support for double VLAN tagging (Q-in-Q)
<p>QoS Features The NetIron XMR, NetIron MLX, and NetIron IMR devices support multiple QoS mechanisms such as EXP mapping, traffic policing and traffic shaping that can be applied to Layer 2 and Layer 3 services</p>	<ul style="list-style-type: none"> • Provides policy-based support for multiple QoS mechanisms <ul style="list-style-type: none"> ○ EXP bit mapping (to CoS) ○ Traffic Policing based on a variety of options that are supported by the Foundry router ○ Traffic Shaping based on a variety of options that are supported by the Foundry router • Allows a QoS policy to be applied at multiple levels: <ul style="list-style-type: none"> ○ at a given interface or ○ to a VLAN instance, or ○ at the service level, with all sites in the VPN/VLAN automatically inheriting from the policy definitions, thereby providing a high degree of configuration consistency and automation

¹ Formerly known as the Lasserre / V. Kompella draft

² Based on the Martini drafts



METASOLV AND FOUNDRY NETWORKS – A WINNING COMBINATION

MetaSolv IP Service Activator enables innovative market offerings with the capability to quickly and easily define and introduce new services consistently across provider networks. This powerful solution helps operators drive down operating costs through extensive use of provisioning process automation, as well as pre-integrated support for Foundry Networks and other leading equipment vendors.

The NetIron product family from Foundry Networks provides unparalleled, wire-speed IP/MPLS routing performance, and large aggregate traffic capacity to meet the expanding requirements of service providers and large enterprises. Built on a robust, high availability system architecture, these routers are designed for the most demanding of applications in a converged network. The NetIron XMR Series multi-service router offers industry leading performance and scalability for advanced IPv4, IPv6, and MPLS service delivery. The NetIron MLX Series of switching routers offers advanced service delivery capabilities for the Metro Ethernet Networks, large enterprise, and High Performance Computing. Powered by Foundry's feature-rich Multi-Service IronWare operating system, the NetIron product family allows network administrators to dramatically lower their total cost of ownership of the network.

The pre-integrated solution offered by Foundry Networks with MetaSolv allows operators to reduce deployment times, realize faster time to revenue, improve customer retention, and lower their cost of ownership.

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MetaSolv, Inc. (Nasdaq:MSLV) is a global leader in comprehensive operational support system solutions for next-generation communications service providers. MetaSolv automates the order-to-activate provisioning process for traditional and next-generation IP-based wireline and mobile service providers. MetaSolv's multi-service, multi-technology capabilities include order management, inventory management, service activation and network mediation. More than 170 global service providers – including Brasil Telecom, BT, Cable & Wireless, O2, Singtel, Sprint, Telstra, T-Mobile, UPC, Verizon Dominicana, and Vodafone – use MetaSolv's solutions to achieve increased revenues, reduced costs, and enhanced customer service. MetaSolv is a global company, headquartered in Plano, Texas.

MetaSolv has offices in these countries and regions: Australia, Brazil, Canada, Dubai, France, Germany, Hong Kong, India, Italy, Singapore, Spain, United Kingdom, and the United States. Complete location information is available at www.metasolv.com.

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