IP Address Management Solutions

Unified Management of IP Plan and Multi–Vendors DNS and DHCP Services

Highlights:

- Full IPAM, DNS, DHCP integrated solution

- Flexible and Scalable IP Plan Modeling

- Multi-Vendors Services Management

- True Global Visibility for global Management

- Awarded Graphical User Interface with greater ease-of-use for better Efficiency

- Active IP Address and Port Tracking for IPAM Reconciliation

- Granular and Flexible Delegation capabilities

- Advanced Reports and Services Monitoring

The volume of hardware and virtual devices connecting to the internet and to corporate networks has led to exponential growth in the number of IP addresses required, leading to significant operational challenges. As a result, the performance, reliability, scalability and ease of deployment and administration of these services have become key strategic assets.

Many system administrators still use spreadsheets to cross-reference IP addresses. This most basic method is extremely limited, introduces great risk and is costly especially when a large number of IP addresses must be managed and synchronized with the Domain Name System (DNS) and the Dynamic Host Configuration Protocol (DHCP).

SOLIDserver™ manages and centralizes information relating to IP addressing plan and multi-vendor DNS-DHCP services to reference, organize, and plan resources. Our goal is to provide a complete and simple solution that enables comprehensive administration of these services, while adapting to the technical, human and administrative challenges of IT resource installation.

EfficientIP's SMART DDI solution adapts to business and IT objectives by allowing the creation of specific DNS, DHCP, IPAM and VLANs deployment processes. SOLIDserver™ DDI appliances provide high availability, security and automation and guarantee that your network infrastructure truly supports your business imperatives.

SOLIDserver™ is the cornerstone of DNS-DHCP-IPAM projects for Datacenter, Internet DNS, LAN infrastructures, cloud computing and for any IT organization dealing with the challenges of a dynamic infrastructure: IPv6, BYOD, DNS security (DNSSEC), virtualization, etc.

Global Visibility for Global Management

SOLIDserver™ stores all information concerning the overall IP address and VLAN plans (IP addresses, IP pools, subnets) as well as DNS and DHCP server configurations in a centralized repository. It provides a single, comprehensive and real-time view of the entire address space deployed over multiple networks, and with address pools and DNS information deployed on multiple DHCP and DNS servers throughout the network.

SOLIDserverTM enables comprehensive access to data across an overall network at a glance, based on user-defined or standard search criteria. Several powerful search engines enable simple or complex searches based on multiple criteria, not only within a server or a subnet but across all data networks.

This unique approach allows us to drill into the embedded database using customized criteria in order to select specifically requested information, ensuring efficient management aligned with operational needs.

Multiple and Overlapping IP Addressing Plan Management

SOLIDserver™ enables you to manage an unlimited number of overlapping identical IP addressing plans. Each IP plan can be seen and managed independently from the others in a dedicated IP space. The coherency, integrity and uniqueness of IP resources are ensured within an IP space. It is also possible to create links among IP Spaces to simplify NAT management among networks.

DNS and DHCP servers are associated with one specific IP space and are thus managed with a comprehensive consistency control with the IP plan.

This is an important functionality especially following an acquisition or merger of companies with identical IP addressing plans. In that situation it is mandatory to manage all IP spaces of the global network from the same centralized point. This is possible with SOLIDserver™ IP Spaces.

DDI Data Consistency, Integrity and Uniqueness Control

SOLIDserver™ ensures the consistency of user-established configurations by verifying the entered data and its coherence in your network.

SOLIDserver™ eliminates IP address conflicts such as duplicate IP addresses, subnet overlapping, naming errors or overlaps between DHCP services. Thus, SOLIDserver™ helps to prevent configuration errors and guarantees the integrity and the reliability of DNS and DHCP servers.

Flexible and Scalable IP Plan Modeling

The IP addressing plan is the foundation of the network upon which network services are organized and deployed. The IP addressing structure can be defined according to one or several criteria which can be technical, administrative or organizational. As a consequence, one of the fundamental requirements for an efficient IPAM solution is to ensure the possibility to model existing and future IP plan organizations according to your needs and criteria.

Flexibility and Scalability: SOLIDserver™ enables you to model an IP addressing plan precisely and easily, according to multiple criteria. It is possible to mix and match models to construct a tailor-made address structure for your company. There is no limitation on the number of levels and depth that can defined in the IP plan. All branches of this tailor-made tree structure can be independent if needed.

This makes it fast and easy to design and manage VLSM subnets (Variable Length Subnet Masking). The flexibility of hierarchical tree structures certifies the ease of modifications. It is possible to reorganize, extend, and migrate IP addressing plans according to the evolution of your enterprise.

Engineering Rules applied on the IP Addressing Plan: Hierarchical IP structures enable you to define specific properties, attributes and constraints to be applied to resources and objects, such as name and size, for each level of the IP addressing plan. Properties of the resources can be inherited from a level to a sub-level, to be included in a hierarchical organization of engineering rules mapped on the hierarchical IP plan structure.

This unique and unequalled approach allows you to adapt your IPAM tool not only to your specific IP plan structure but also to your engineering rules of resource deployment, applied to each level of your IP plan.

Unified Management of IP–VLAN Plans with DHCP–DNS Services

SOLIDserver™ is a unified management solution that enables you to manage and deploy IP addressing plans and VLANs with DNS and DHCP services from a single tool and in one operation.

For exemple, It is possible to create, in one operation, a /24 subnet with a range of IP addresses allocated through DHCP service. All configurations will be automatically carried out by SOLIDserver™ on remote defined DNS and DHCP servers and will configure DNS and DHCP services according to specified options. The SOLIDserver™ GUI displays all information in a single view for immediate access. DNS, DHCP, VLAN and IP plan data are easily consolidated.

Local database updates with subnet parameters and DNS-DHCP configurations

SOLIDserver

DNS and DHCP services

Similarly, the manual allocation or deletion of an IP address in the subnet will automatically update DNS service configurations by creating or deleting A, PTR and CNAME records on the appropriate DNS server(s).
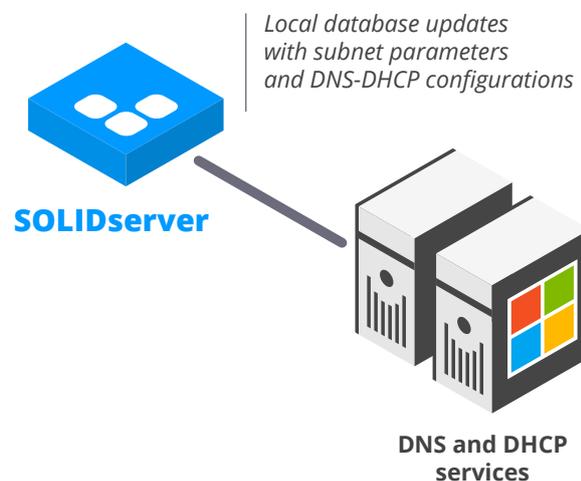
Mass Updates Across All Networks and Servers

Manage services, not servers: EfficientIP developed a unique approach to IPAM by changing the way IP plan and DNS&DHCP services are managed.

Based on a centralized repository and cross-browsing capability to access data across the entire infrastructure, EfficientIP has eliminated hierarchical arborescence dependences which limit the management of a network to a branch-by-branch and server-by-server basis. It is possible to simultaneously browse, select and manage all subnets dedicated to VoIP on several networks and DHCP servers and change their options in one operation. It is now one easy step to identify all resource records of all DNS zones of all DNS servers for which a TTL must be changed. For example, in just a few seconds, all IP addresses allocated to HP printers can be identified and selected to modify their names.

This unique and powerful approach is a fundamental feature to ensure easiness to find and manage network infrastructures as a single system or unit per unit.

IPAM Web Portal «On Demand» to Match with Relevant Operational Criteria

Efficiency of administration relies upon the capability to browse, list and select resources across the entire database. As a consequence this efficiency is directly linked with the flexibility of the interface of administration tools in order to display appropriate information. The SOLIDserver™ web interface can be fully adapted to customized needs in order to list relevant information from IP resources.

Each user defined attribute of a resource, such as phone number, serial number or location, can be displayed with the listing of IP data. An administrator can add or remove displayed attributes for each type of object: subnets, zones, scopes, addresses etc… For example, it is possible to list administrative information associated with a list of IP addresses such as the building and floor number or support phone number of a network for each subnet of the subnets list.

Each attribute has an autonomous search engine. The search criteria can be refined by using functions such as "match strictly", "different from", or "strictly over". It is possible to easily identify all IP addresses allocated to printer objects with a name that starts with "pr-us-ny" across all networks.

The unrestricted browsing capabilities across the entire server architecture associated with the user defined web portal are fundamental and necessary features which bring flexibility and simplicity to services deployment according to operational needs. The IPAM Web portal builder warranties the adaptability and scalability of our solution and therefore ensures the durability of your investments.

Control Resource Qualification Thanks to Object Templates

Daily network operations require deployments of IPAM resources with both speed and coherency. One of the most important issues of collaborative tools is to ensure that everybody respects defined methods.

Customizable Forms for Resource Qualification: SOLIDserver™ delivers a unique solution enabling you to graphically create unlimited numbers of partially or fully customized templates of forms for network objects. Each template, known as «Class», can have a specific list of fields such as a MAC ad- dress, phone number or whatever has to be qualified by the user according to your company's needs.
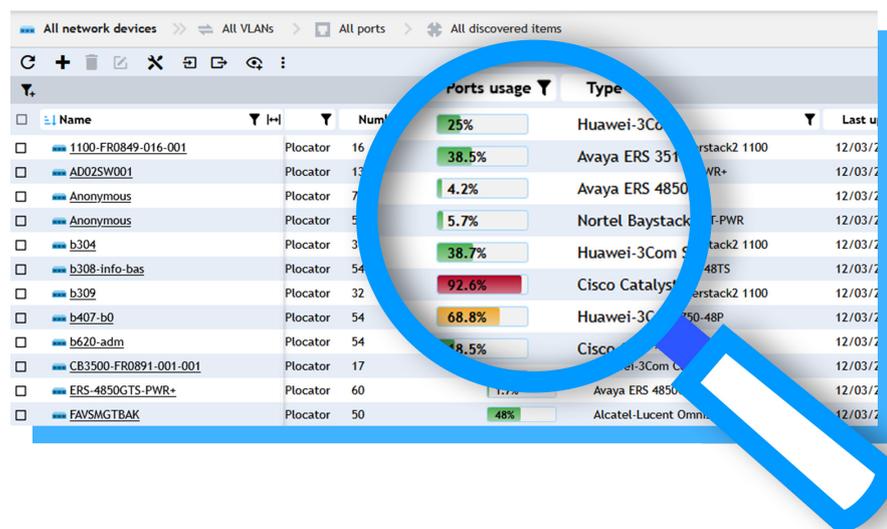
GUI Studio: Drag and Drop Tool for Creating Resource Templates

The GUI StudioTM module has powerful Drag and Drop tools to allow you to create specific templates of forms for your IP resources in only few minutes. SOLIDserver™ streamlines your IP addressing & naming plan by controlling the qualification of the registered data according to tailored rules. Each partition of the addressing plan can have its own rules of documentation and its own methods of organization. It is then possible to ensure a uniform working method with all administrative teams.

Network Organization with Templates

SOLIDserver™ enables you to create templates of networks for automating and streamlining subnet creations. When creating a new subnet, the administrator can select a template to apply and all specific properties of the template will be applied to the subnet and objects inside the subnet. It is possible to restrict access to only authorized IP address templates for each IP range of the subnet. For instance, authorize only the use of a Printer template for IP addresses within a Printer range.

Similarly, it is possible to create dedicated templates for VoIP subnets with specific predefined options, size, naming conventions or DNS templates for internal or external zones.

Active IP Address and Port Tracking for IPAM Reconciliation

The integrity of your IT data is of great value to your company. EfficientIP's solutions supply powerful network discovery tools to automatically document IP address attributes and provides precise and comprehensive views of network connections (Switch/Port/VLAN/Name/MAC). Netchange-IPLocator™ discovers the physical and logical topology of the network infrastructure, bringing a real capacity to watch over, follow and control the location of your IP addresses' devices.

Dynamic Devices Documenting: For each IP and MAC address discovered, the Netchange-IPLocator™ appliance will identify the following key information: switch name, switch slot, switch port, switch description, switch OS version, VLAN number, switch status, port speed, link status, first seen and last seen.

History of IP/MAC Addresses Mobility: Netchange-IPLocator™ identifies and archives any changes in IP or MAC address location on the network. It brings a global view of the mobility of the company's stations by address offset -switch, slot, port and VLAN offset of an IP and/or a MAC address. The displayed, archived information shows when, where and who was connected and remains connected so that IP and MAC mobility can easily be tracked.

IPAM Reconciliation: Netchange-IPLocator™ enables you to compare the theoretical IP address locations defined in SOLIDserver™ IPAM repository with the discovered information. At a glance, it is easy to identify inconsistencies and receive alerts by email. Advanced reports supply a simple, comprehensive and summarized view.

Remove Infected Devices: Based on discovery results, it is easy to locate and remove an infected station in order to provide optimal reactivity to security alerts.

Reclaim Unused IP and MAC Addresses: EfficientIP's discovery process can identify IP and MAC addresses that have been unused during a given period of time. Based on this information, it is easy to determine whether IP addresses can be released or reallocated.

Control IP Port Occupancy Rate: EfficientIP's discovery process can identify any switch ports which have been unused during a defined period of time as available for release or reallocation. This is particularly important in the context of datacenters helping to avoid overconsumption of Giga Ethernet ports to unused servers.

Discover Unauthorized Devices: Discoveries made by Netchange-IPLocator™ can send alerts when an unknown device is detected on the network.

Control Who Can Do What, How and When

Bring Users' Responsibilities in Line with Right Delegation: SOLIDserver™ structures the de- legation of administration in a precise and methodic way, according to your organizational context. SOLIDserver™ adapts to all management policies, allowing you to create unlimited user profiles. Gra- nular or very specific delegation rights enable you to implement a hierarchical and/or matrix organization. There are no more hierarchical arborescence dependences forcing you to delegate the administration network branch by branch and server by server. Thanks to this approach, the company's organization is implemented transparently and independently according to the specific requirements of each SOLIDserver™user.

For example it is possible to create a group of administrators which have a restricted access to IP pools dedicated to printer objects across all subnets.

Control Deployment of Authorized Objects: SOLIDserver™ enables you to control the templates that can be applied by users on IP addresses, subnets and all IP resources. For instance a printer group will not have the possibility to deploy other object templates than the printer template. In this case, SOLIDserver™ will enforce the use of dedicated templates for printer objects. Users are easily guided and administration processes are streamlined.

Adapt Product Interface according to Level of Privileges: In compliance with the user's rights, the user interface will be automatically profiled in order to simplify the navigation, the reading of the information, and the user's interactions. A group of users which only have reading rights will not be able to see menus that allow the creation or deletion of resources.

Historical of Administration Tasks: SOLIDserver™logs all administration tasks carried out, both manually operated by users and automated by SOLIDserver™ enabling advanced searches by user, object type and date.

Secured Users Authentication: User authentication can be carried out locally by SOLIDserver™ or remotely on an external authentication server such as LDAP, Active Directory, and RADIUS.

Work Flow Management

Unify Collaborative Processes: SOLIDserverTM's Work Flow offers a unique methodology for streamlining request management processes. SOLIDserverTM enables several groups of administrators to work around the same IPAM repository and share mutual work methods. Requests are defined in forms. The content of each form depends on the type of request and can be fully customized with graphic tools to fit with your company's requirements. Basically a request is identified by a serial number, requestor, addressee, requested object type, request status, creation date, and last modification date.

Store Request and Assignment History: All information related to IP resources attributions is stored and available in the SOLIDserver™ database. Users can query this knowledge database to obtain a record of the cumulated requests. The database can be searched according to multiple criteria: by user, by references, or by type of actions.

SOLIDserver™ appliances have built-in mechanisms that support unmatched high availability, to ensure continuity of IP services.

Ethernet Port Failover: The Ethernet port failover mechanism allows you to connect SOLIDserver™ appliances to two switch ports, an active link and a passive link. In case the active link fails, the passive link will ensure connection continuity in less than 1 second. This feature ensures the physical connection of the device.

SOLIDserver™ DHCP High Availability with Active-Active DHCP Failover: SOLIDserver™ network services ensure DHCP service 100% availability thanks to an active/active failover mechanism. Both servers can answer to DHCP request with full consistency control, thus eliminating all risks of double IP address allocation. Two SOLIDserver™ can be deployed on 2 different networks and be integrated in a geographical disaster recovery architecture.

Thanks to the SmartArchitecture™, the deployment and the administration of the DHCP architecture in high availability is carried out automatically.

Disaster Recovery Processes

Multi-Vendors DNS and DHCP Disaster Recovery Processes: SOLIDserver™ enables simple, fast and secure disaster recovery processes. SOLIDserver™ stores all required information for multi-vendor DNS and DHCP services recovery in its embedded database. For example, in case of a Microsoft® DHCP server crash SOLIDserver™ can push the complete configuration of the crashed server onto a new server, with the exact configuration it had just before the crash. In a short period of time the DHCP service will be up without painful administration tasks. All risks of conflicting IP address allocation are eliminated.

Disaster Recovery Processes for SOLIDserver™: SOLIDserver™ has a local embedded database with integrity control mechanisms requiring no ongoing maintenance. The local database of all SOLIDserver™appliances can be replicated in real time on an appliance called SOLID Master. The database replication includes the entire service, network and system configurations of the appliances. This means that the DNS and DHCP architecture is its own backup architecture. Backups can also be done on an FTP server.
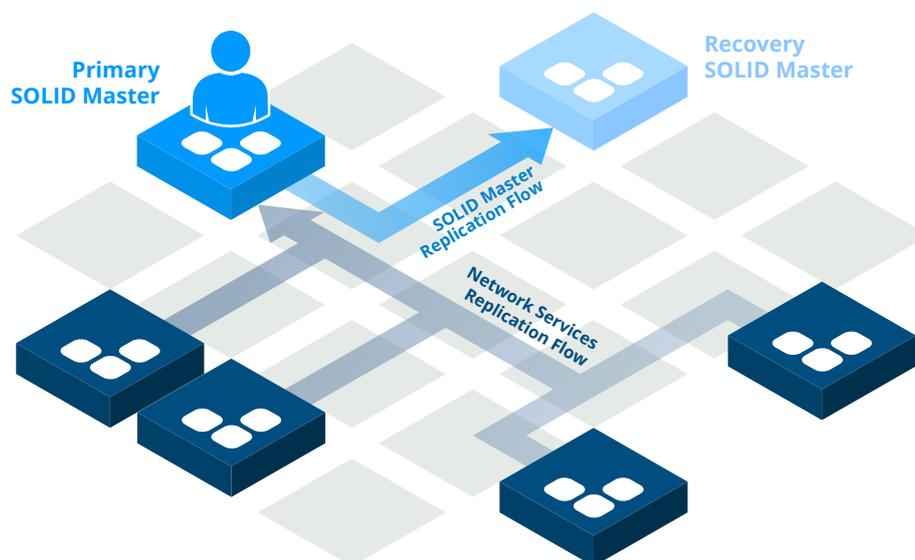
Reports and Services Monitoring

Reports on Demand: EfficientIP's solutions supply a variety of reports on IPAM, DNS, and DHCP services, enabling you to have a pro-active analysis of service consumption and trends. Reports are a powerful tool in order to control capacity planning and get a real understanding of how network resources are used. Reports are also important information to help deal with and anticipate problems such as an unusual number of DNS queries revealing a DNS attack. The catalogue of reports can be extended with customization. SOLIDserver™ delivers all required information and tools to create customized reports matching exactly administrator-defined needs.

Service Monitoring: EfficientIP's solution enables you to precisely monitor services and system parameters, such as DNS query reports, DHCP request reports, or CPU load.

Threshold Alerts: Thresholds can be configured on services and systems such as DHCP scopes occupancy rate. Alerts are given by an automated email or SNMP traps for preventive or corrective actions.

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Americas	**Europe**	**Asia**
EfficientIP Inc.	EfficientIP SAS	EfficientIP PTE Ltd
1 South Church Street	90 Boulevard National	60 Paya Lebar Road #11-47
West Chester, PA 19382-USA	92250 La Garenne Colombes-FRANCE	Paya Lebar Square SINGAPORE 409051
+1 888-228-4655	+33 1 75 84 88 98	+65 6678 7752