SOLIDserver™ DDI

Integrated DNS, DHCP and IP Address Management

Highlights:

- Offer integrated, highly available and secure DNS, DHCP, IPAM, VLAN and VRF services

- Support efficiently your company's growth and improve productivity with intelligent policy-driven deployment automation

- Propose central management of multi-cloud resources, including AWS and Azure

- Increase network reliability and security with error-free configurations, centralized management and best practices enforcement

- Optimize app management and performance thanks to smart DNS-based traffic steering

- Prepare for IPv6 and lead the IPv4/IPv6 coexistence and transition

- Benefit from 80% time savings and 75% cost savings

- Enhance teamwork efficiency via smart task delegation and workflow

- Anticipate problems with proactive services monitoring, user-defined reports and tracking

- Help digital transformation of IT with full support of API and webhooks allowing easy connection with the ecosystem

Modern infrastructures are a foundation of key IT transformation initiatives: hybrid cloud, multicloud , SD-WAN, Zero Trust, zero-touch networks, mobility, IoT, and more. These global trends are adding extreme pressure on company network services, regardless of size, complexity and business focus. To simplify management, enhance efficiency of your operations, and accelerate time to service, a cost effective, easy-to-use DNS-DHCP-IPAM (DDI) solution becomes a must-have.

The SOLIDserver™ suite of appliances is designed to deliver high-performance solutions for critical DNS-DHCP-IPAM services. SOLIDserver provides vital benefits for, reliability, resiliency and security of your network foundations. Being cloud and orchestrator agnostic, the solution benefits from smart automation to simplify and accelerate deployment of new services and reduce operational costs.

The solution is based on a wide range of software and hardware models to match varying requirements, from small branch offices to the largest enterprises.

Integrating IPAM with DNS–DHCP for Simplified Network Management

SOLIDserver ensures dynamic, integrated and centralized management of IPAM with DNS and DHCP services in a single automated process, ensuring the highest level of quality and efficiency. Any change made to the IP structure is automatically populated and pushed to the DNS and DHCP services, removing the chance for error and dramatically reducing time and effort for network administrators as three tasks are turned into one.

Ensure Connectivity Between All Network Components via Synchronization & Automation

SOLIDserver DDI considerably simplifies deployment of workflows and ensures proper synchronization between all repositories for quickly enabling access to newly deployed applications, as well as facilitating M2M (machine to machine) communications. The resulting configuration consistency increases overall network security, as it prevents unused resources still being accessible by persons wishing to take advantage of exposed legacy data.

As an example, it is possible to create a /24 subnet, in one operation, with IP ranges allocated to DHCP services. All configurations will be carried out automatically by SOLIDserver, which will configure DNS and DHCP services according to specified options.

### Global Visibility with Unlimited Search Capability

SOLIDserver offers a unique and more accurate way to access your data with a transverse view, offering unlimited search criteria that overcomes hierarchical tree dependencies, thus enabling unrestricted data visibility.

Automate Hybrid Cloud Deployment Workflow Using DDI

SOLIDserver is designed to provide you with an extended API and all the necessary tools to make your private cloud service orchestration easier. Embedded DDI orchestration processes are easily tunable through GUI, allowing you to extend default behaviors according to your own policies while masking the complexity of driving multi-vendor/hybrid cloud/multi-tenant DNS/DHCP environments. You gain in service deployment agility while increasing the visibility on your cloud platform, enhancing your provisioning process.
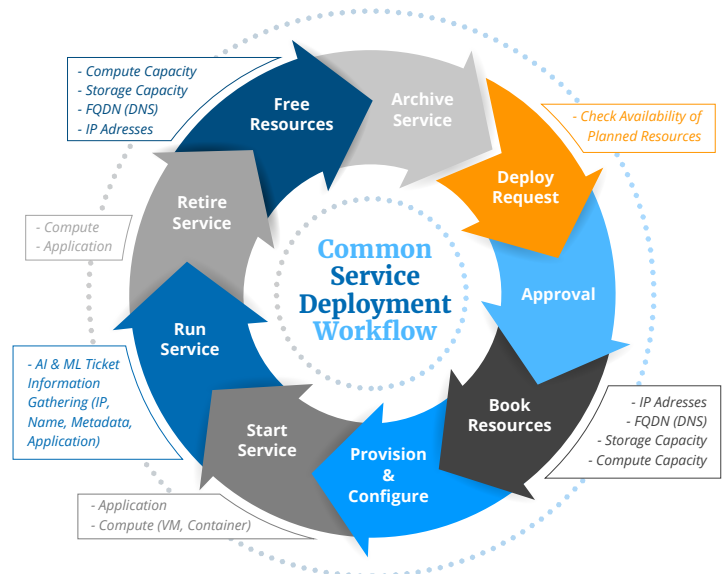
Function of DDI in the IT provisioning process
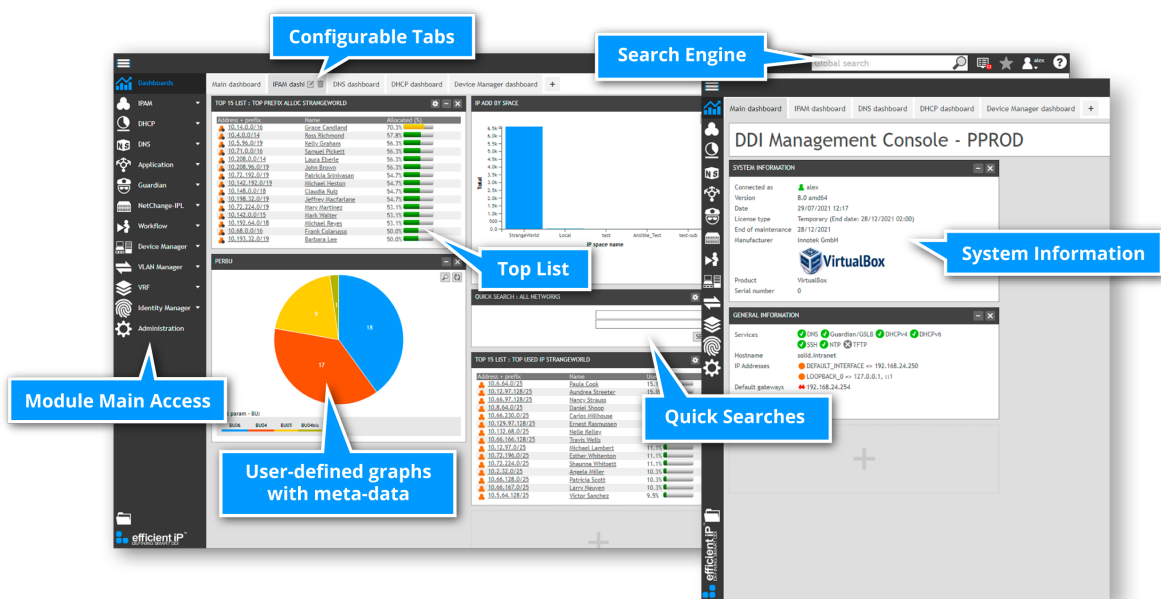
SOLIDserver™ Web-Based Management GUI

Error-free Configurations due to Consistency Control

SOLIDserver ensures overall consistency of DNS-DHCP server configurations and IPAM data in order to eliminate all risks of conflicting configurations, duplicate IP addresses or subnet overlaps.

- Ensure global data consistency
- Resolve conflicts between the IPAM repository and network reality
- Discover unauthorized devices on the network
- Reclaim unused IP addresses and ports
- Plan delegation and workflow according to the company organization

Unparalleled Control of IP Address Management

SOLIDserver is a comprehensive appliance-based solution to manage the global lifecycle of IP addresses, from their provisioning and their organization to their deployment and monitoring down to their retirement. EfficientIP provides a global IPAM solution for critical core network services, offering the ability to model from simple to very complex IP plans.

Single Source of Truth, Even for Multi-Cloud

Unlike spreadsheets or basic IPAM offerings, SOLIDserver brings you a centralized, accurate, complete inventory of all your IP resources, on which you can base your resource management.

For cloud deployments, this cloud-agnostic IP address management process maintains consistency between overlapping IP spaces, across all the various providers a company can have. It gives the IT team a unique repository, as well as global management of the IP address system to make multi-cloud effective, secure, and well-managed.

Even public clouds are visible in the IPAM thanks to an automatic synchronization process provided by IPAM sync for AWS and IPAM Sync for Azure. This allows global IP address plan management, while also offering better visibility on shadow IT, and improved control and cost optimization through visibility from a single viewpoint.

Enforce Your Rules With Automated IPAM Policies

The key to success in the deployment of IP resources is having users comply with best practices. This can be easily achieved by embedding your own IPAM policies using templates and rules, while exploiting object inheritance. This can be further enhanced by automating triggered actions.
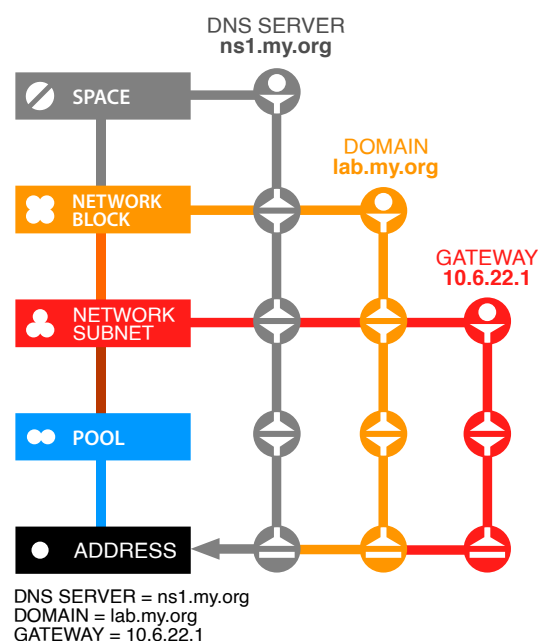
IPAM properties inheritance

DNS SERVER = ns1.my.org
DOMAIN = lab.my.org
GATEWAY = 10.6.22.1

You therefore overcome the complexity of IPAM-related processes and deliver a user-friendly application guiding users through automated policy enforcement.

- Streamline resource qualification and deployment with templates
- Organize resource consumptions according to your IP plan or rights delegation
- Rationalize resource configurations to control service deployment
- Automate your naming conventions
- Map IP plan organizations to fit your company's organizational needs

Massive Scalability for Future-proofing your IT strategy

Able to handle millions of IP addresses, and supporting IPv6 transition plus IPv4/IPv6 coexistence, EfficientIP's market leading IPAM makes sure your business can grow without hindrance.

Customized Delegation and Workflow

Structure administration delegation according to your organizational situation, to bring users' responsibilities in line with rights delegation.

Network Insight for Consistency and Security

Having comprehensive visibility into IP address connections on the network brings a real capacity to locate, identify and monitor devices. Insight into the relationship between devices, users and IP addresses helps track inconsistencies, allowing you to keep your IP Plan up to date, as well as to signal potential security issues

State-of-the-Art DNS to Ensure Service Continuity

DNS is a mission-critical network service. Without it, every other service, utility and application simply cannot function. This makes DNS an obvious target for cyber attacks.

Every DNS outage is costly in terms of decreased productivity and lost revenue. EfficientIP therefore offers the SOLIDserver suite of robust DNS appliances which address security, reliability and stability, delivered with end-to-end automation.

SmartArchitecture™: Simplified Design, Deployment and Management of DNS Services

EfficientIP simplifies the design, deployment, and management of vital multi-vendor DNS and DHCP services through a policy-driven approach. SmartArchitecture offers templates of DNS architectures that automatically apply best practices to configure initial server setup (DNS Master-Slave, Multi-Master DNS, Stealth DNS, DNS Load Sharing), and then manage the architecture as a single, integrated deployment.

EfficientIP's SmartArchitecture delivers flexible DNS failover designs, for local and/or remote sites, enabling automated deployments, ensuring services availability, and optimizing performance:

- No DNS timeout
- High scalability with an unlimited number of servers
- Compliant with best practices

SmartArchitecture ensures reliable and secure DNS services, which is the foundation of your network infrastructure. Deploying DNS and DHCP services is now fast, easy and risk-free..

Manage Multi-vendor DNS Servers to Leverage Existing Investment

SOLIDserver IP Address Management solution (IPAM) integrates seamlessly with DNS servers from multiple vendors, enabling unified, automated and policy-driven management for higher security, reliability and scalability of the network infrastructure. The web-based GUI is used to centrally or individually manage SOLIDserver appliances and compatible DNS servers, including Microsoft, Open Source, BIND and ISC DHCP. Using this single interface to manage multi-vendor configurations reduces errors, saves time and eliminates having to replace existing DNS servers.

DNS Security: Detect - Protect - Remediate

DNS Guardian monitors DNS cache-recursive activity at the transaction level to get end-to-end visibility on resolutions for complete understanding of the traffic. This real-time, context aware, behavioral threat detection based on advanced analytics and DNS Transaction Inspection (DTI technology) allows you to determine specific signatures of different DNS attacks, detect data exfiltration attempts, take appropriate countermeasures and initiate remediation actions. The solution helps ensure service continuity and protect DNS confidentiality. DNS Guardian delivers high-performing logging capabilities which can be seamlessly integrated with leading SIEM solutions such as Kibana, Splunk, or QRadar.

Hybrid DNS Engine offers 2 technologies (BIND, NSD/Unbound) within a single appliance to mitigate zero-day vulnerabilities and eliminate single point of failure.

DNS Blast is a DNS cache appliance that can support up to 17 million queries per second, allowing it to absorb extreme DDoS attacks and block weak-signal threats. The advanced security features of DNS Guardian are also incorporated.

DNS Cloud integrates Amazon Web Services Route 53 and Azure DNS Zones Cloud DNS services. It provides you the ability to manage an in-house and cloud DNS infrastructure from a single management console, securing your Internet visibility.

DNS Firewall and Threat Intelligence Services detect and block malware activity, identify infected devices and prevent new attacks. They provide an up-to-date layer of defense against ever-evolving malicious domains.

DNS Client Query filtering (CQF): improves client application access control. CQF delivers network segmentation down to the individual user providing an earlier security barrier and granular filtering, enabling DNS-based client access control to vital apps and infrastructure for better application access control for a stronger security ecosystem.

DNSSEC Automation: SOLIDserver automates and simplifies the integration of DNSSEC on DNS servers, eliminating the complexity of configuration and the risks of misconfigurations.

Stealth DNS architecture set-up and configuration is quickly and easily completed without the need of any special or specific DNS expertise typically required to deploy state of-the-art DNS architecture.
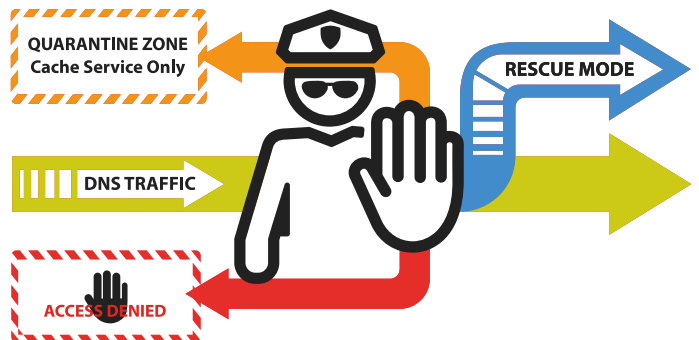
Smart adaptive countermeasures

Piloting Multi-Cloud

IPAM and DNS, together with IP protocol, are the glue of the complex network that permits communication between all cloud islands. The SOLIDserver DDI appliance suite has been designed to run on all major virtualization solutions available on the market, including VMware, Microsoft Hyper-V and OpenStack. It can also run in public cloud environments on AWS, Microsoft Azure and Google Cloud.This cloud-agnostic approach dramatically simplifies hybrid cloud strategy while lowering expenditure and improving agility.

Unified Management Using Specific App Repository

Today's applications use multiple infrastructure components across multi-cloud environments, making it extremely difficult to track their location. EfficientIP helps solve this by bringing a specific repository to match the enterprise ecosystem. New apps can be integrated into existing naming plans to ensure corporate policies are adhered to. The application repository can be enhanced with meta-data to match with organizational and technical information.

This application repository can be leveraged with the DNS GSLB product. The result is unified management of DDI and GSLB from the same console, for enhanced app availability and performance across multiple datacenters.

Highly Robust DHCP Services

DHCP High Availability with Active-Active Failover

EfficientIP's SmartArchitecture ensures DHCP services continuity through a unique approach, combining high service availability with performance. SOLIDserver supplies high availability architecture for DHCP services in active/active mode:

- Zero-admin deployment: Automatic configuration
- Instantaneous activation
- Deployment across remote sites

It enables automated deployments, ensuring services availability and optimizing performance:

- DHCP Star failover
- DHCP failover one-to-one
- DHCP cluster
- Microsoft® DHCP Split Scope and DHCP failover in load-balance mode

Management of Microsoft and Linux DHCP Servers

SOLIDserver allows you to leverage your Linux-based DHCP infrastructures and guarantee service high availability and security while reducing operating costs. As an overlay solution, SOLIDserver unifies the management of the IP plan and existing DHCP services from a centralized interface, offering global visibility, administration processes automation, best practices enforcement and advanced delegation capabilities.

Protection Against Denial of Service Attacks

EfficientIP has embedded intelligence in its SOLIDserver appliance to analyze DHCP request behaviors and identify inappropriate client requests to inform network administrators. SOLIDserver then prevents an interruption of DHCP services by ignoring bad requests.

Rich User to IP Link Using Specific Identity Manager

The Identity Manager functionality enables connection of SOLIDserver DDI solution to external directory systems like Microsoft Active Directory in order to add data related to the users of the network in the set of managed information. By getting all the authentication events from the directory, users' information about their sessions is automatically linked to the other IP information in the IPAM for rich automation and availability to the I&O teams. This also enables automatic actions between users and applications for strengthened security, increased visibility and improved control over the IT environment.

Integration/Ecosystem

SOLIDserver DDI can easily be integrated in complex ecosystems through automation and use of its rich REST API set. All information contained in the IPAM can be gathered and manipulated through API in order to perform real-time integration in any IT system, allowing infrastructure as code (e.g. with Cisco DNA), continuous deployment (e.g. with Ansible), ITSM (e.g. with ServiceNow) or software defined datacenter automation (e.g. with Terraform).

In addition to the rich API, SOLIDserver is able to call webhooks upon occurrence of specific events. It is also possible to push event messages into an enterprise service bus as publish/subscribe (or synchronous) actions towards other ecosystem solutions. The content of the call made can be customized with specific values depending on the nature of the event.

Observability and analysis of the SOLIDserver appliance metrics can be performed by the CNCF Prometheus solution through a native connector, helping support and capacity planning activities.

Summary of Main Components & Features

The SOLIDserver operating system is reliable, manageable, scalable, and secure. It includes all the required components and features to simplify and automate deployment and management, while reducing operational costs.

- Built-in zero administration database: no data corruption, errors, or loss

- Hardened Operating System

- Embedded stateful firewall

- Network services: DNS (Domain Name System), DHCP (Dynamic Host Configuration Protocol), NTP (Network Time Protocol), TFTP (Trivial File Transfer Protocol)

- Centralized IPAM with built-in functionalities allowing for registration, provisioning, planning and management of the full life-cycle of IPv4/IPv6 addressing and naming services

- Centralized application repository for cross-platform visibility and simplified management

- Multi-vendor DNS & DHCP services management: Microsoft - BIND - ISC DHCP - AWS Route 53 - Azure DNS Zones - SOLIDserver appliances

- System monitoring and log management

SOLIDserver™ Appliances

To fulfill each customer's specific needs, EfficientIP's suite of appliances includes 10 models with different levels of performance for IPAM and DNS-

SOLIDserver Appliance	DNS (QPS)	DHCP (LPS)	Recommendation
SDS-50 [1]	500	20	Designed for deployment in local offices. DNS & DHCP only.
SDS-270	7,000	125	Designed for deployment in small enterprises or branch offices.
SDS-570	25,000	500	Designed for deployment in small to medium-sized enterprises.
SDS-1170	50,000	1,000	Designed for deployment in medium-sized enterprises.
SDS-2270	125,000	2,500	Designed for deployment in medium to large-sized enterprises.
SDS-3370	250,000	6,000	Designed for deployment in large enterprises, data centers and service provider environments.
BLAST-4070	3,000,000	--	Designed for high performance and DNS security. Does NOT include IPAM or DHCP functions.
BLAST-5070	10,000,000	--	Designed for high performance and DNS security. Does NOT include IPAM or DHCP functions.
BLAST-5570	17,000,000	--	Designed for high performance and DNS security. Does NOT include IPAM or DHCP functions.
SDS-7070	--	--	Designed for large IPAM services with numerous objects to manage

DHCP services:

(1) SDS-50 is only available as a virtual appliance