Purpose of this Guide

The present guide is a succession of basic procedures to give you an overview of a proper first configuration of SOLIDserver and the interaction between the different modules. This document is a shortened version of the Administrator Guide to help you get your first hand on the appliance in version 5.0.x and upper, so do not hesitate to refer to SOLIDserver Administrator Guide to have a more detailed vision of each modules and of the different ways to manage data on your network.

Before going further and to make sure that you can use SOLIDserver at the best of its potential, ensure that your equipment matches the prerequisites below.

• SOLIDserver prerequisites:
  • 1 CPU
  • 1 GB RAM
  • 20 GB HDD
  • A display resolution of 1024x768
  • A web browser:
    • Microsoft Internet Explorer, version 7.x*, 8.x* or 9.x* (compatible mode),
    • Mozilla Firefox, version 3.x* or 4.x*,
    • Chrome, version 10x*,
    • Safari, version 4x* or 5x*,
  •
• A mouse

Keep in mind that SOLIDserver was designed to ease up network management at all levels, from the network devices to the IP addresses as well as through different key protocols: the IPAM, DNS and DHCP among others.

To provide an overview of SOLIDserver potential for network management, throughout this document we will:

1. Install SOLIDserver on a VMware and do the first configurations,
2. Create a DNS server and domain,
3. Create a DHCP server,
4. Create an IPAM space containing a block and a subnet of IP addresses,
5. Add one of your network devices and start managing it through IPLocator.

In the procedures below, the configuration will be very basic so certain fields will not be not mentioned at all in the steps, it means that there is no need to fill them or to change their content for a basic configuration.

DNS Basic Configuration

The Domain Name System is a hierarchical distributed naming system for computers, services, or any resource connected to your network. It uses a database that will locate computer services, devices, etc. on the network and resolve hostnames vs IP addresses queries. It is an essential module in SOLIDserver that divides the database as such:

- **Server**: It represents the highest level of the DNS module hierarchy without which you cannot manage DNS databases. A server can contain all kinds of zones and their corresponding RRs. You can also configure views on certain servers to limit users access to your domains.

- **View**: Within the DNS hierarchy the view is located between the server and the zone and is optional. It allows you create different versions, or responses, to a DNS query at the zone level. This way two clients querying the same zone will receive different answers because their levels of access are not the same (external client vs employee, administrator vs ordinary user, etc.).

- **Zone**: It represents the second most important level of the DNS hierarchy. The zone is the level where you define the DNS resolution (IP > name or name > IP), your domains and users access through the views.

- **RR**: It is represents the lowest level of the DNS hierarchy but is not the least important of them, it basically corresponds to the database itself: the RR set of each zone determines the zone type through the SOA first of all and then through all kinds of RR (A, NS, PTR ...).

You can add as many servers, views and zones as you need. Obviously, you will be able to configure servers that resolve hostnames vs IP addresses queries in IPv4 or in IPv6. But for the purpose of this guide we will simply configure an EfficientIP DNS server managing IPv4 queries.

One of the main SOLIDserver features in DNS is the smart architecture. Designed to manage one or several servers in four different configurations (Master/Slave, Stealth, Multi-Master ands single server) it provides a backup of the configuration and data of the physical servers it manages. Therefore if your server crashes or is in timeout, remove it from the smart architecture and add your new server (you need to name it exactly the same) and the configuration will be pushed onto the server and overwrite its content. Which is why we strongly advise that you use the smart architecture for every server that you add and intend to manage through the All servers list of the DNS module.
Adding a DNS Server

The SOLIDserver management console allows you to manage any DNS server you might need. Once you add a new SOLIDServer DNS, you can manage all its DNS configuration and its data. In the following procedure, we will add an EfficientIP DNS server to show you the basic configuration steps and then add it to a smart architecture to ease its management. For more details regarding DNS servers, refer to the SOLIDserver Administrator Guide.

To add an EfficientIP DNS server

1. Go to the DNS tab.
2. Click on the DNS servers icon. The DNS All servers list opens.
3. In the menu, select Add > Server > EfficientIP DNS. The Add a DNS server wizard opens.
4. In the DNS server name field, name your server with a valid FQDN.
5. In the IP address field, type in the IP address of the DNS server you want to manage.
6. In the Management Protocol drop-down list, select SSL.
7. Click OK to commit your creation. The report opens and closes. The server is listed.

Note

The server might appear Busy in the status column. It will change to OK after a while.

To manage a DNS server through a smart architecture

1. From the DNS All Servers page menu, select Add > Server > Smart DNS architecture. The Add a DNS server wizard opens.
2. In the DNS server name field, name your smart server with a valid FQDN. Click on NEXT.
3. In the SMART DNS architecture field, select Single server. Click on NEXT.
4. In the Select DNS server drop-down list, select the server you just created.
5. Click on OK to commit the creation. The report opens and closes. The smart architecture is now listed, but not the server it contains.

To display the smart server and the physical server(s), click on in the upper right corner. If it status is Timeout, follow the procedure below.

To synchronize a server

1. In the All servers list, tick the server(s) you need to synchronize.
2. In the menu, select Edit > Synchronize. The Synchronization wizard opens.
3. Click on OK to synchronize it. The report opens and might take a little while before closing. The list is visible again.

Adding a DNS Zone

When deploying a name server, it is important to understand the difference between a zone and a domain. A zone is a delegated point within a DNS structure, and is made up of adjoining elements of the domain structure, which are governed by a name server.
There are six types of zones that can be resolve an IP address using a name or a name using an IP address. We will simply focus on the most basic zone there is, the Master name zone (that resolves a name thanks to an IP). For more details regarding DNS zones, refer to the SOLIDserver Administrator Guide.

**To add a master name zone**

1. From the DNS All servers page, click on the name of the smart architecture. The All zones page opens.
2. In the menu, select **Add** > DNS zone. The Add a DNS zone wizard opens.
3. Click on **NEXT**.
4. In the **Name** field, name the zone (respecting the syntax given in RFC1034).
5. Click on **NEXT**.
6. In the **Responsible** field, fill in your email address.
7. Click on **OK** to commit the creation. The report opens and closes. The zone is listed.

If you click on the zone name, you will access the All RRs page and display all the RRs of your zone: the SOA and the NS.

### DHCP Basic Configuration

The Dynamic Host Configuration Protocol (DHCP) is an essential module in SOLIDserver thanks to which you will configure channels of communication between network devices on your network. SOLIDserver provides a number of DHCP configurations to suit your needs. Once DHCP is implemented, it quickly becomes a service that the entire network is depending on.

Within SOLIDserver the DHCP is divided into different levels of hierarchy:

- **Server**: It is the highest level of the DHCP hierarchy. Without the server, you cannot provide access to your network to DHCP clients. Servers can contain scopes, ranges, leases, statics and groups.
- **Scope**: It the second level of the hierarchy. The scope will listen to certain parts (subnets) of the network and provide whatever the clients ask for if it can. The scope can contain ranges and leases or statics.
- **Range**: It is the third level of the hierarchy. It indicates a dynamic addressing configuration of the DHCP and can contain the clients leases.
- **Lease**: It is the one of the two lowest elements of the DHCP hierarchy. A lease is a client access to a certain area of the network for a limited amount of time and correspond to a specific IP address of the IPAM module.
- **Group**: It is an equivalent of the second level of the DHCP hierarchy as it allows you to assign a number of options to a group of statics is a fixed addressing configuration.
- **Static**: It is the other lowest element of the hierarchy. Just like its name suggests, it indicates a fixed addressing configuration. A static ensures that a specified client always uses the same IP address on a subnet.

In the procedures below we will simply add a server and configure the NTP server. To get more details regarding the different configurations available to the user in the DHCP module (in v4 and v6) refer to the Administrator Guide in the chapter 37-45.

Just like the DNS, the DHCP offers the possibility to set up smart architectures. Designed to manage one or several servers in four different configurations in IPv4 (One-to-One, One-to-Many, Split-Scope and Single-Server) and three architecture in IPv6 (Single-Server, Split-Scope and Stateless). Smart architectures provide a backup of the configuration and data of the physical servers it manages. Therefore if your server
crashes or is in timeout, remove it from the smart architecture and add your new server (you need to name it exactly the same) and the configuration will be pushed onto the server and overwrite its content. Which is why we strongly advise that you use the smart architecture for every server that you add and intend to manage through the All servers list of the DHCP module.

Adding a DHCP Server

A proper configuration of the DHCP requires a server, a scope and then a range of leases or a list of statics. However, through this guide, in the DHCP and IPAM procedures especially, we will prove to you the importance a proper configuration of the interaction between module. Indeed, we will not even need to create a scope in the DHCP directly: creating a subnet will automatically create the corresponding scope.

To add a SOLIDserver DHCP server

1. Go to the DHCP tab.
2. Click on the DHCP servers icon. The DHCP All servers list opens.
3. In the menu, select Add > Server > EfficientIP DHCP. The Manage a DHCP server wizard opens.
4. In the DHCP server name field, name your server with a valid FQDN.
5. In the IP address field, type in the IP address configured during the installation: 198.168.42.1.
6. Click on OK to commit the server configuration. The report opens and closes. The server is listed.

To manage a DHCP server through a smart architecture

1. From the DHCP All Servers page, select Add > Server > DHCP smart architecture. The Manage a DHCP server wizard opens.
2. In the DHCP server name field, name your server with a valid FQDN. Click on NEXT.
3. In the DHCP smart architecture list, select Single-Server. Click on NEXT.
4. In the Available DHCP servers list, double click on the name of the DHCP server that you just created. The server is now in the Selected DNS servers list. Click on NEXT.
5. Click on OK to commit your configuration. The report opens and closes. The smart architecture is now listed, but not the server it contains.

To display the smart server and the physical server(s), click on ⌘ in the upper right corner. If it status is Timeout, follow the procedure below.

To synchronize a server

1. In the All servers list, tick the server(s) you need to synchronize.
2. In the menu, select Edit > Synchronize. The Synchronization wizard opens.
3. Click on OK to synchronize it. The report opens and might take a little while before closing. The list is visible again.

Now we will move on to the IPAM module.

IPAM Basic Configuration

The Internet Protocol Address Management module is a powerful tool that allows you to plan, track, organize and manage IP addresses into networks. Within SOLIDserver we refer as network as a large concept that includes 5 levels of organization:
• **Space**: It is the essential entry point of the IP address management. It defines the addressing space in which all the addresses will be unique. The spaces can contain blocks, subnets, pools and/or IP addresses. They can contain IPv4 and IPv6 addresses.

• **Block**: It is a container including all subnets. The blocks can contain subnets, pools and/or IP addresses. They can be created to manage IPv4 or IPv6 addresses.

• **Subnet**: The subnets can contain pools and/or IP addresses. They can be created to manage IPv4 or IPv6 addresses.

• **Pool**: The pools can contain IP addresses but are optional, they simply help you add a level of hierarchy that might be useful or configure common options to a set of IP addresses. They can be created to manage IPv4 or IPv6 addresses.

• **IP addresses**: They obviously represent the lowest level of the IPAM hierarchy. They can be organized through pools, subnets, blocks and spaces.

The IPAM is one of the most important modules as it allows setting the IP addresses management strategies and creates a link between the DNS and DHCP modules. Within SOLIDserver the spaces and the whole hierarchy of objects allows you to manage IPv4 and IPv6 networks with very similar procedures. However, keep in mind that not all the IPv4 options and configurations are available in IPv6 just yet. For more details regarding the different possible configurations that you can set through SOLIDserver refer to the Administrator Guide in the IPAM part.

### Adding a Space

Before configuring any addressing in the IPAM, you will need to create a space. It will hold as many IP addresses as you want organized in as many blocks, subnets and pools as needed. The space is simply a container that does not corresponds to any IP address, it will contain them. Keep in mind that within one space the IP overlapping is not permitted, however you can use the same block start and end addresses from one space to the other if need be. The same goes for the subnets and pools: to use the same IP address twice or more, they must be part of different spaces.

**To add a space**

1. Go to the IPAM tab.
2. Click on the Spaces icon. The All spaces list opens, the only space listed is the default Local space.
3. In the menu, select Add > Space. The Add a space wizard opens.
4. In the Space name field, name the space.
5. In the Mode drop-down list, select All behaviors. The DNS properties and DHCP properties sections appear.
6. Configure the DNS:
   a. In the DNS server drop-down list, select your smart server.
   b. In the Domain list field, double click on your zone. It is now listed in the Selected domains list.
   c. In the Default domain drop-down list, select your zone.
   d. In the DNS server for reverse zones drop-down list, select your smart server.
   e. Tick the Update DNS checkbox to automate the IP data retrieval from the DNS server.
7. Configure the DHCP:
   a. In the DHCP cluster field, select the failover-your.physicalserver, i.e. the only failover listed.
b. Tick the **DHCP static** checkbox to automate the creation of statics for every assigned IP address.

8. Click on **NEXT**. The last page of the wizard opens.
9. Click on **OK** to commit the creation. The report opens and closes. The new space is listed.

---

**Adding a Block**

The block is the second step towards your IP addresses organization. You can create them in IPv4 or IPv6 in the same space. In this guide we will focus on the global logic behind the blocks creation in IPv4. To manage IPv6 network and learn more about the specificities it implies in SOLIDserver, please refer to the Administrator Guide.

**To add a block**

1. From the **IPAM** tab All spaces list. Click on the new space name, the All blocks page opens and displays the list of IPv4 blocks of the space (it is empty).
2. In the menu, select **Add > Block**. The **Add an IPv4 Block** wizard opens.
3. In the **Block Name** field, name the block.
4. In the **Block address** field, type in the start address *192.168.0.0*.
5. In the **Prefix** drop-down list, select *16 [CIDR]*. The netmask is automatically modified to *255.255.0.0*.
6. In the **Mode** drop-down list, select *All behaviors*. The DNS properties and DHCP properties sections appear: the data configured at space level is already applied to your block.
7. Click on **OK** to commit the creation. The report opens and closes. The block is listed.

---

**Adding a Subnet**

Finally, we will add an IPv4 subnet in the block we just created. After that addition, we invite you to have a look in the DNS and DHCP modules to fully understand the advantages of configuring these three modules together.

**To add a subnet**

1. From the **IPAM** tab All blocks list. Click on the new block name, the All subnets page opens and displays the list of IPv4 subnets of the block (it is empty).
2. In the menu, select **Add > Subnet > Manual**. The **Subnet class** page of the wizard opens.
3. In the **Subnet class** list, double-click on *None*. The **Add an IPv4 subnet** page opens.
4. In the **Subnet name** field, name the subnet.
5. In the **Address** field, type in *192.168.42.0*. The **Netmask** and **Prefix** fields automatically change to configure a /24 subnet with the corresponding netmask *255.255.255.0*.
6. Click on **OK** to commit your creation. The report opens and closes. The subnet is listed.

According to the configuration of your space, the elements you created in the IPAM are automatically created in the DNS and DHCP modules. You will see the following:

**In the DNS module**

Go to the DNS tab All servers page and click on the smart server name to display its zones: a reverse zone was created. In the menu, select Display > All RRs. A new set of RRs was created for the reverse zone (a PTR, an NS and the SOA) and an A RR that matches the subnet Gateway address.
In the DHCP module
Go to the DHCP tab All servers page and click on the smart server name to display its scopes: a scope named after your subnet and matching its start and end address was created.

IPLocator Basic Configuration

IPLocator is a powerful tool to have an overview and manage all the devices connected on your network. Rather than adding them one by one, it allows you to add one and then automatically discover all the devices it is connected to. Through the SNMP protocol IPLocator will query network devices and collect information (device name, IP address, number of ports, ports usage, etc). Therefore, the quantity and the quality of the collected information depend on the number of imported network devices and the support of the SNMP MIBs.

IPLocator centralizes all collected information in its database. The highest element of this module hierarchy is obviously the network device: it can contains ports and VLANs. Moreover, IPLocator provides a list of all discovered items on the network, these items are usually edge devices (workstations, servers, printers, ...) connected to the network devices. They are inserted in the database automatically after each discovery, and provide useful information such as: where and when a device (IP or MAC address) has been connected, on which device and port, in which VLAN. For more details regarding the Discovered items, refer to the chapter 51 of SOLIDserver Administrator Guide.

Adding Network Devices

Like we just saw, you will need to add one of your devices and then find through CDP (Cisco Discovery Protocol), NDP (Neighbor Discovery Protocol) and LLDP (Link Layer Discovery Protocol) the other devices connected.

To add a network device

1. Go to the IP Locator tab.
2. Click on Network devices. The All network devices page opens.
3. In the menu, Add > Network device. The Add network device wizard opens.
4. In the IP Address field, type in the IP address of the device you want to add.
5. In the Target space, select the space you just added.
6. Click on OK to commit the addition. The report opens and closes. The device is listed.

If you click on the device name, you will see all the objects it contains.

To import network devices using CDP/NDP/LLDP

1. From the IP Locator All network devices page, tick the device you just added.
2. In the menu, select Add > Import > Using CDP/NDP/LLDP. The Add network device wizard opens.
3. In the Target space drop-down list, select the space you created.
4. Click on OK to commit the network sweep. The report opens and takes a while before closing. The new devices are listed.

The chosen target space will be updated with the devices data if its IP addresses match the ones configured on your network.