Startup Tool TG - Getting Started Guide

For Classic Ingate SIParator® Version 5.0.10 or later

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0   Quick Start

The Ingate Startup Tool TG is designed to simplify the initial "out of the box" configuration of your Ingate Unit. The tool will automatically configure your Ingate Firewall or SIParator to work with the IP-PBX, SIP trunking service provider of your choice, and sets up all the routing needed to enable remote users to access and use the enterprise IP-PBX.

The Ingate Startup Tool TG is free of charge for all Ingate Firewalls and SIParators. Get the latest version of it at http://www.ingate.com/Startup_Tool_TG.php

Install the Ingate Startup Tool TG on your PC. Connect PC Ethernet port to Ingate Unit's ETH0, E0 or Gb0 (depending upon model) port with an Ethernet cable. If installing through network try keeping network simple without routers, NAT devices, tagged VLAN or VPN

tunnels.

Ingate Unit's default IP address is 192.168.1.1, and admin password is "admin" but the Ingate Startup Tool TG can change them. See chapter 4.1 for details.

Before using the Ingate Startup Tool TG to configure a new Ingate unit for the first time you <u>must</u> install your licenses into the Ingate unit. See chapter 4.2 for details.

After licenses has been installed start the Ingate Startup Tool TG and:

1. Select Model "Ingate Firewall/SIParator" (see chapter 4.4)
   NOTE: If Ingate Startup Tool TG fails to start (reports missing runtime) please install required runtime library by opening the folder Ingate Starup Tool TG was installed in and double-click on vcredist_x86.exe in it.
2. Connect to your Ingate Unit (see chapter 4.4)
3. Select product type and describe your network topology (see chapter 4.5)
4. Select your IP-PBX from list (or select "Generic" if missing) (see chapter 4.6)
5. Select your ITSP provider from list (or select "Generic") (see chapter 4.7)
6. Upload the generated configuration to your Ingate Unit (see chapter 4.8)
7. Log in to Ingate Unit's Web Administration interface to apply changes and fine-tune your configuration (see chapter 4.8)

Keep in mind, this Ingate Startup Tool TG is a commissioning tool, not an alternate administration tool. This tool is meant to get an "out of the box" Ingate started with a pre-configured setup, enough to make your first call from IP-PBX to an ITSP. Additional programming and administration of this Ingate unit should be done through the Web Administration.

1 Ingate Startup Tool TG

The Ingate Startup Tool TG is an installation tool for Ingate Firewall® and Ingate SIParator® products using the Ingate SIP Trunking module or the Remote SIP Connectivity module, which facilitates the setup of complete SIP trunking solutions or remote user solutions.

The Startup Tool TG is designed to simplify the initial "out of the box" commissioning and programming of the Network Topology, SIP Trunk deployments and Remote User deployments. "TG" in its name stands for Trunk Groups. The tool will automatically configure a user's Ingate Firewall or SIParator to work with the IP-PBX, SIP trunking service provider of their choice, and sets up all the routing needed to enable remote users to access and use the enterprise IP-PBX. Thanks to detailed interoperability testing, Ingate has been able to create this tool with pre-configured set ups for several of the leading IP-PBX vendors and ITSPs.

Download Free of Charge: The Startup Tool TG is free of charge for all Ingate Firewalls and SIParators. Get the latest version of the Startup Tool TG at
http://www.ingate.com/Startup_Tool_TG.php

Make sure that you always have the latest version of the configuration tool as Ingate continuously adds new vendors once interoperability testing is complete. If you don't find your IP-PBX vendor or ITSP in the lists, please contact Ingate for further information.

The Startup Tool TG will install and run on any Windows operating system and on Wine on Linux.

Keep in mind, this Ingate Startup Tool TG is a commissioning tool, not an alternate administration tool. This tool is meant to get an "out of the box" Ingate started with a pre-configured setup, enough to make your first call from IP-PBX to an ITSP. Additional programming and administration of this Ingate unit should be done through the Web Administration.

NOTE: The Ingate Startup Tool TG (SUT TG) replaces the older Ingate Startup Tool (SUT). SUT TG should be used in all new installations unless instructed otherwise.

2   Startup Tool TG Installation

The following procedure will guide you through the download and installation of the Ingate Startup Tool TG on a Windows operating system. There may be minor variances with other operating systems.

Download and Upgrade Steps:

1) Goto http://www.ingate.com/Startup_Tool_TG.php and click "Download Startup Tool TG" to begin the download process.

2) Save the file to a location of your choice, and run it to begin installation.

3) Follow the on-screen instructions. Once the installation is complete, select "Close". Now the Startup Tool TG can be started from the start menu or the desktop short-cut.

NOTE: If Startup Tool TG fails to start (reports missing runtime) please install required runtime library by opening installed folder and double-click on vcredist_x86.exe

3   Connecting the Ingate Firewall/SIParator

When delivered from the factory, the Ingate Firewall and SIParator come with preconfigured IP address 192.168.1.1 and Password "admin". To configure the unit, you need to either set your PC's IP address to be on the 192.168.1.0 network or use the Startup Tool TG's "change unit's IP address" feature to assign a suitable IP address.

Connect an Ethernet cable between port "ETH0", "E0" or "Gb0" (depending upon model) of your Ingate unit and your PC. Connect power to the unit and turn it on.

If not using a direct cable connection the PC running the Startup Tool TG and the Ingate unit should be on the same LAN segment/subnet. Avoid connections across routers, NAT devices, tagged VLAN or VPN tunnels. Keep the network Simple.

4   Using the Startup Tool TG

Available online at www.ingate.com/login.php, a customer, VAR, distributor can login and register units, obtain software upgrades, register licenses, access documentation, and download information for the installation, configuration and use of Ingate products.

Before using the Ingate Startup Tool TG to configure a new Ingate unit for the first time you must install your licenses into the Ingate unit.

If your PC is on the same 192.168.1.x subnet as the default IP address of the Ingate unit then you can open 192.168.1.1 in your browser.

If you can open the above log in page please log in as "admin", password "admin" and continue reading chapter 4.2

Otherwise continue reading chapter 4.1 below about how to change Ingate unit's IP address.

4.1 Change unit's IP address

From factory, the Ingate Firewall and SIParator comes with preconfigured IP address 192.168.1.1. If that IP address does not suit you (your PC is on some other subnet) the Ingate Startup Tool TG can change the Ingate unit's IP address using a technique called magic ping.

To change unit's IP address connect your PC with an Ethernet cable to Ingate unit's ETH0 port (also called "E0" or "Gb0" on some units) and perform the following:

1) Launch the Ingate Startup Tool TG on your PC
   NOTE: If Ingate Startup Tool TG fails to start (reports missing runtime) please install required runtime library by opening the folder Ingate Starup Tool TG was installed in and double-click on vcredist_x86.exe in it.

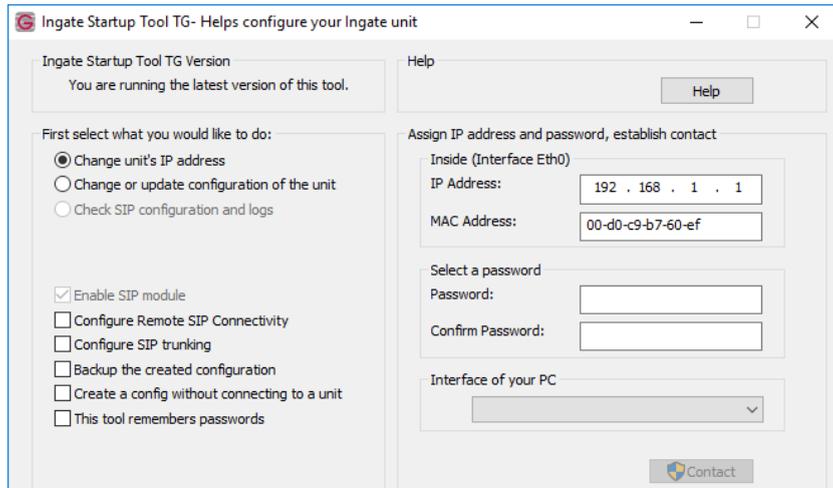2) Select Model "Ingate Firewall/SIParator", and click Next.
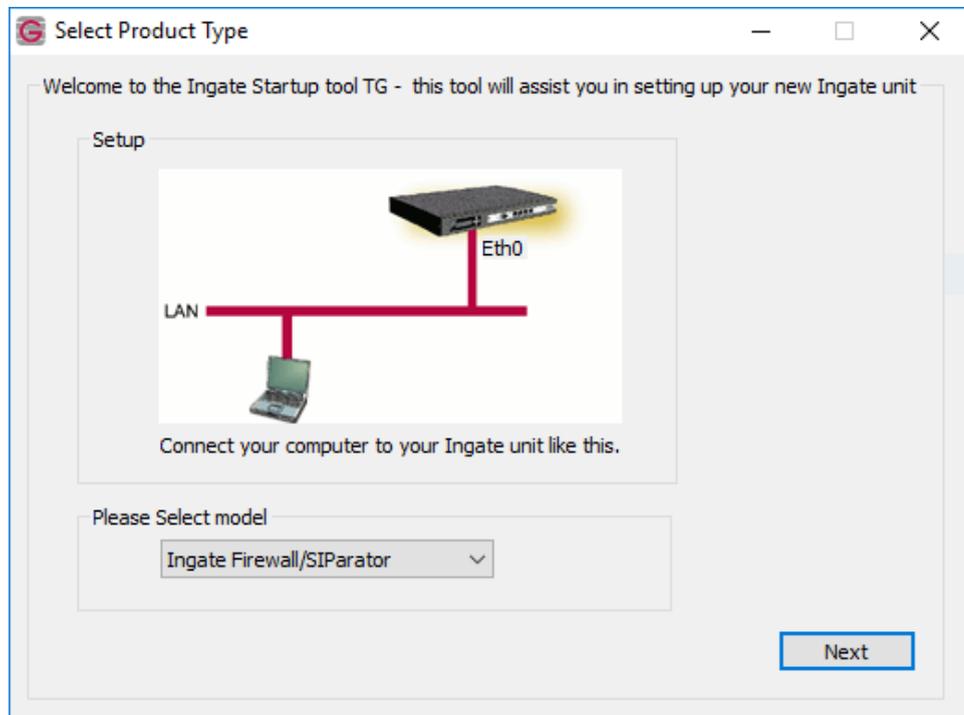
3) **Make sure** none of the checkboxes "Configure Remote SIP Connectivity", "Configure SIP trunking", "Backup the created configuration" or "Create a config without connecting to a unit" are enabled!

4) Select "Change unit's IP address".

5) Fill in:
   - the IP address you would like to assign to the Ingate unit's ETH0 port
   - the Ingate unit's MAC address (as stated on its bottom sticker)
   - the password you would like to assign to the Ingate unit
   - the PC interface Ethernet cable is attached to

6) Once all required values are entered, the "Contact" button will become active. Press the it to have the Startup Tool TG find the Ingate unit, configure its new IP address and password, and connect to it.

7) Now you can use your browser to access the Ingate unit at the IP address you have selected at step 5 above.

8) Log in as "admin" using the password you have selected at step 5 above.

4.2 Install licenses onto Ingate unit

In the web configuration interface of the unit select "Administration", "Upgrade".

Select the license file you have received for the unit and click on "Upgrade" to install it on your Ingate unit.

After licenses have been installed your Ingate unit is ready to be configured using the Ingate Startup Tool TG.

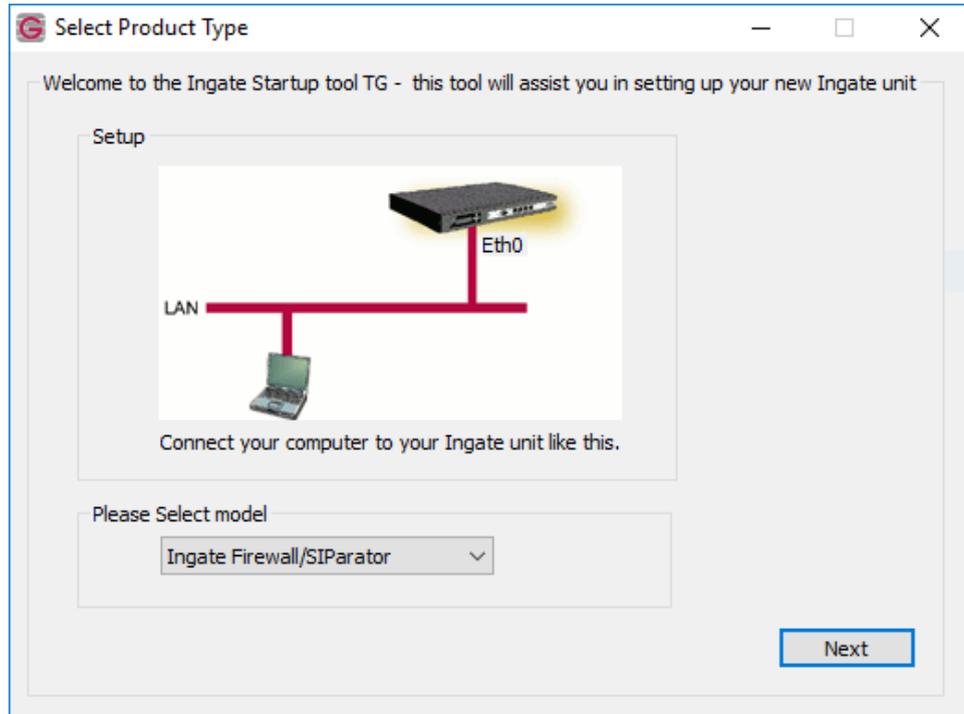## 4.3 Configure Ingate unit using Ingate Startup Tool TG

The Startup Tool TG is designed to simplify the initial "out of the box" commissioning and programming of the Network Topology, SIP Trunk deployments and Remote User deployments. Keep in mind, this Ingate Startup Tool TG is a commissioning tool, not an alternate administration tool. This tool is meant to get an "out of the box" Ingate started with a pre-configured setup, enough to make your first call from IP-PBX to an ITSP. Additional programming and administration of this Ingate unit should be done through the Web Administration.

4.4 Launch Ingate Startup Tool TG

1) Launch the Ingate Startup Tool TG on your PC
   NOTE: If Ingate Startup Tool TG fails to start (reports missing runtime) please install required runtime library by opening the folder Ingate Starup Tool TG was installed in and double-click on vcredist_x86.exe in it.

2) Select Model "Ingate Firewall/SIParator", and click Next.

3) Select "Change or update configuration of the unit".
   Make sure checkboxes "Configure Remote SIP Connectivity" and "Configure SIP trunking" are enabled.

Other options:
Backup the created configuration: apply settings both to the unit and save them to file.
Creating a config without connecting to a unit: just create a config file, no changes will be made to connected Ingate unit.
The tool remembers passwords: startup tool will remember all entered passwords.

4) Enter Ingate unit's IP address and password (default 192.168.1.1 and "admin")

5) Once all required values are entered, the "Contact" button will become active. Press the "Contact" button to have the Startup Tool TG find the Ingate unit and connect to it.

4.5 Network Topology

The Network Topology is where the IP Addresses, Netmask, Default Gateways, Public IP Address of NAT'ed Firewall, and DNS Servers are assigned to the Ingate unit. The configuration of the Network Topology is dependent on the deployment (Product) type. When selected, each type has a unique set of programming and deployment requirements, be sure to pick the Product Type that matches the network setup requirements.
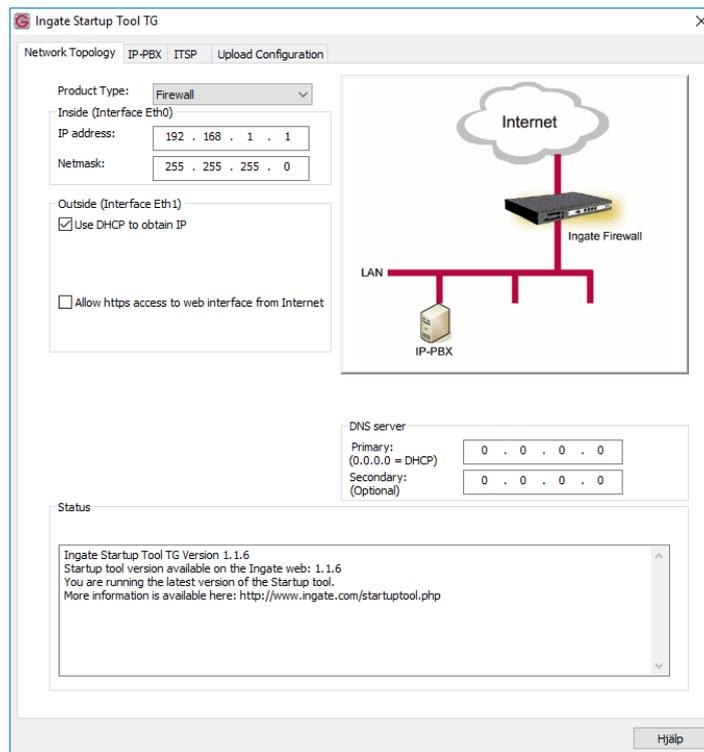
Configuration Steps:

1) In the Product Type drop down list, select the deployment type of the Ingate Firewall or SIParator. When selecting the Product Type, the rest of the page will change based on the type selected.

Hint: Match the picture to the network deployment.

- **Firewall:** The Ingate unit is the Default Gateway for the LAN; it is the primary edge device for all data and voice traffic out of the LAN to the Internet.
- **Standalone SIParator:** The Ingate unit resides on a LAN network and on the WAN/Internet network. The Default Gateway for SIParator resides on the WAN/Internet network. The existing Firewall is in parallel and independent of the SIParator. Firewall is the primary edge device for all data traffic out of the LAN to the Internet. The SIParator is the primary

edge device for all voice traffic out of the LAN to the Internet.

- **DMZ-LAN SIParator:** The Ingate unit resides on a DMZ network connected to an existing firewall, but also on the LAN network. The Ingate needs to know the Public IP Address of the Firewall. This existing Firewall must be the Default Gateway for the DMZ network; the existing Firewall is the primary edge device for all data and voice traffic out of the LAN and DMZ to the Internet. SIP Signaling and Media must be forwarded to the Ingate SIParator, from the Internet to the SIParator. The voice traffic from the LAN is directed to the SIParator then to the existing Firewall.

- **DMZ SIParator:** The Ingate unit resides on a DMZ network connected to an existing Firewall. The Ingate needs to know the Public IP Address of the Firewall. This existing Firewall must be the Default Gateway for the DMZ network; the existing Firewall is the primary edge device for all data and voice traffic out of the LAN and DMZ to the Internet. SIP Signaling and Media must be forwarded to the Ingate SIParator, both from the Internet to the SIParator and from the DMZ to the LAN.

- **LAN SIParator:** The Ingate unit resides on a LAN network with all of the other network devices. The existing Firewall must be the Default Gateway for the LAN network; the existing Firewall is the primary edge device for all data and voice traffic out of the LAN to the WAN/Internet. SIP Signaling and Media must be forwarded to the Ingate SIParator, from the Internet to the SIParator. The voice traffic from the LAN is directed to the SIParator then to the existing Firewall.

2) Interface Eth0 is the inside interface in all product types except DMZ SIParator. It is the interface you are currently connected through.

3) Interface Eth1 is the outside interface connected to the Internet in all product types except in DMZ, DMZ-LAN and LAN SIParator types. You can either enter a static global IP address or specify it to be configured using DHCP.

"Allow https access to web interface from Internet" allows remote configuration of Ingate unit from anywhere on the Internet. Enabling it opens the Create certificate window that can be used to create a self-signed certificate for https access.

"Gateway" is the default gateway to reach Internet through.

4) Product type DMZ SIParator requires the LAN IP address range.

```
┌─ LAN IP address range ──────────────────┐
│                                         │
│  Low IP:      [ 0 . 0 . 0 . 0 ]         │
│  High IP:     [ 0 . 0 . 0 . 0 ]         │
│                                         │
│  Gateway:     [ 0 . 0 . 0 . 0 ]         │
└─────────────────────────────────────────┘
```

The LAN IP Address Range is the lower and upper limit of network addresses located on the LAN. This is the scope of IP Addresses contained on the LAN side of the existing Firewall. "Gateway" is the existing firewall's IP Address on the DMZ network.

5) Product types WAN and LAN SIParator require the Firewall extern IP

```
Firewall extern IP:  [ 0 . 0 . 0 . 0 ]
```

The Firewall extern IP is the global IP address the existing Firewall can be reached from the Internet on.

6) Enter the DNS Servers for the Ingate Firewall. These DNS Servers will be used to resolve FQDNs of SIP Requests and other features within the Ingate. They can be internal LAN addresses or outside WAN addresses.
When using DHCP to obtain Eth1 address (step 3 above) you can enter DNS server address 0.0.0.0 to use DNS server values obtained through DHCP.

```
┌─ DNS server ────────────────────────────┐
│                                         │
│  Primary:        [ 0 . 0 . 0 . 0 ]      │
│                                         │
│  Secondary:      [ 0 . 0 . 0 . 0 ]      │
│  (Optional)                             │
└─────────────────────────────────────────┘
```
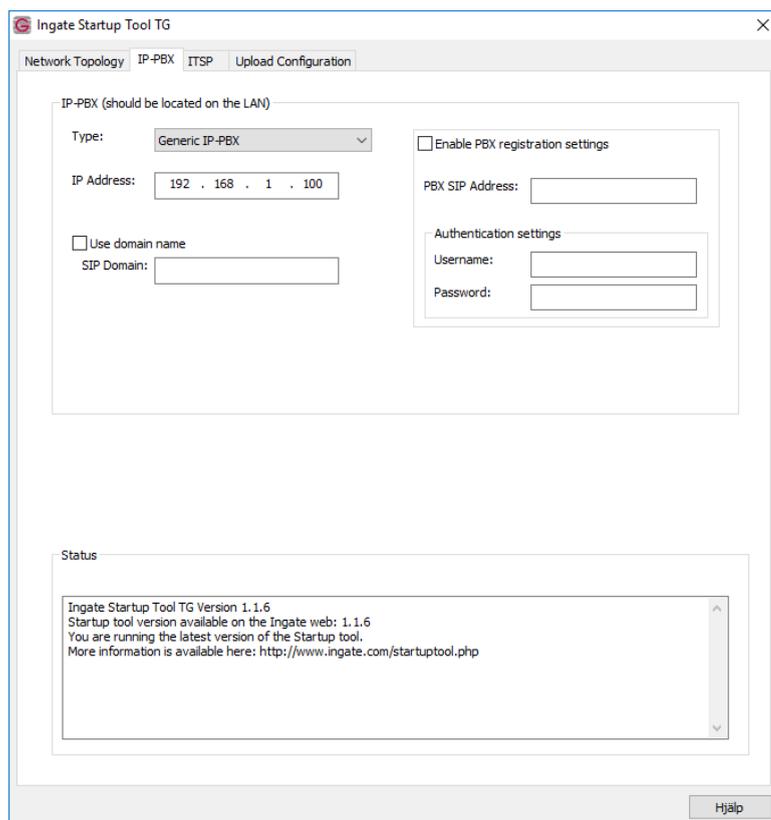
7) Product types LAN-, DMZ- and DMZ-LAN SIParators require the Existing Firewall to forward SIP Signaling Port and RTP Media Ports to the Ingate SIParator. The Ingate SIParator is an ICSA Certified network edge security device, so there are no security concerns forwarding network traffic to the SIParator.

On the existing Firewall:
   a.   Port Forward the WAN/Internet interface SIP Signaling port of 5060 with a UDP/TCP Forward to the Ingate SIParator
   b.   Port Forward the range of RTP Media ports of 58024 to 60999 with a UDP Forward to the Ingate SIParator
   c.   If necessary; provide a Rule that allows the SIP Signaling on port 5060 using UDP/TCP transport on the DMZ network to the LAN network
   d.   If necessary; provide a Rule that allows a range of RTP Media ports of 58024 to 60999 using UDP transport on the DMZ network to the LAN network

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4.6 IP-PBX

The IP-PBX section is where the IP Addresses and Domain location are provided to the Ingate unit. The configuration of the IP-PBX will allow for the Ingate unit to know the location of the IP-PBX as to direct SIP traffic for the use with SIP Trunking and Remote Phones. The IP Address of the IP-PBX must be on the same network subnet at the IP Address of the inside interface of the Ingate unit. Ingate has confirmed interoperability several of the leading IP-PBX vendors.

Configuration Steps:

1) In the IP-PBX Type drop down list, select the appropriate IP-PBX vendor. Ingate has confirmed interoperability several of the leading IP-PBX vendors, the unique requirements of the vendor testing are contained in the Startup Tool. If the vendor choice is not seen, select "Generic IP-PBX".
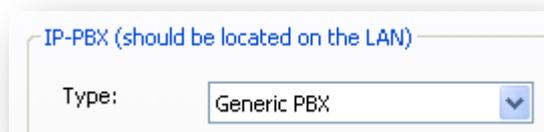
2) Enter the IP Address of the IP-PBX. The IP Address should be on the same LAN subnet as the Ingate unit.

IP Address: 10 . 51 . 77 . 20

3) **Optional:** For some IP-PBX solutions they require a SIP Domain. This domain name is used to route SIP Requests to the IP-PBX associated with that domain. Select "Use domain name" and enter the FQDN

☐ Use domain name
SIP Domain:

4) **Optional:** Only for when Generic PBX is selected, will this option become available. When is option is enabled, the Ingate Registrar is enabled, later on the ITSP configuration, Identities or Users are assigned on the Registrar and associated to the incoming call characteristics. So the PBX registers to the Ingate and the Ingate sends the incoming call to these registered users/identities.

☐ PBX registers at the Ingate

5) **Optional:** Some IP-PBX solutions may display additional fields.

4.7 ITSP

The ITSP section is where all of the attributes of the SIP Trunking Service Provider are programmed. Details like the IP Addresses or Domain, DIDs, Authentication Account information, Prefixes, and PBX local number. The configuration of the ITSP will allow for the Ingate unit to know the location of the ITSP as to direct SIP traffic for the use with SIP Trunking. Ingate has confirmed interoperability many of the leading ITSP vendors.
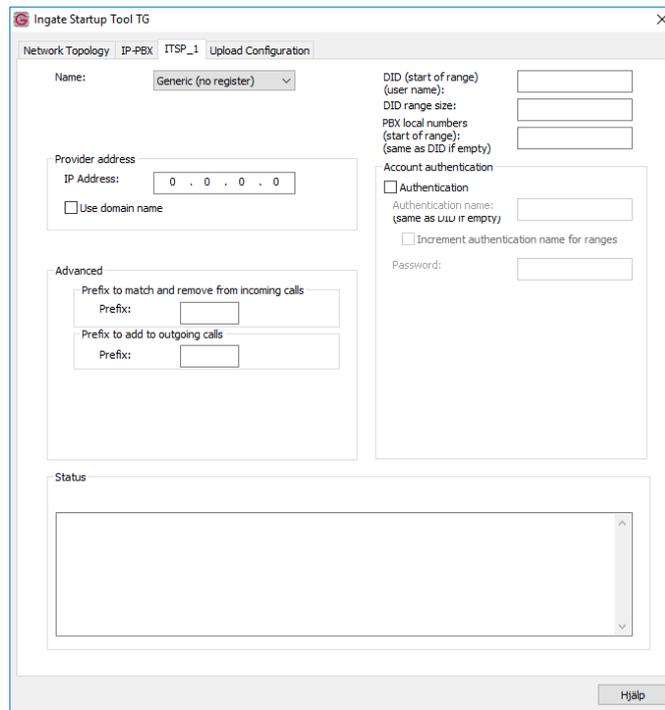
Configuration Steps:

1) In the ITSP drop down list, select the appropriate ITSP vendor. Ingate has confirmed interoperability several of the leading ITSP vendors, the unique requirements of the vendor testing are contained in the Startup Tool. If the vendor choice is not seen, select "Generic (no register)".

When you select a specific ITSP vendor, the Startup Tool will have the individual connection requirements predefined for that ITSP, the only additional entries may be the specific site requirements.

2) Service Providers come in one of two flavors, either they have a trusted IP deployment or they require a Registration account.

    a. In the case where the Service Provider uses a Trusted IP deployment, all that is required is to enter the IP Address or Domain of the Service Providers SIP Server or SBC. Enter the IP Address here, or select "Use domain name" and enter the FQDN of the Service Provider.

    b. In the case where the Service Provider requires the Ingate to Register with the Service Providers SIP Server or SBC, select "Use Account". When "Use Account" is selected, the Registration Account information from the Service Provider is required. Information such as Username/DID, Service Providers Domain, Authentication Username, and Authentication Password.

       i. Enter a DID (Username) in which the Ingate will register with the Service Provider. The Startup Tool also has the ability to program a sequential range of DIDs.

ii. Registrations often require the use of an Authentication Username and Password. Also enter the Domain or IP Address of the Service Provider.

iii. **Optional:** Some IP-PBXs require the use of Ingate's Registrar, where the IP-PBX registers Local Identities/Numbers on the Ingate. The Ingate will direct calls to these registered users. Here enter the start of the range of Identity/Number being registered to the Ingate from the IP-PBX. (Iwatsu and Avaya QE are typical examples of this configuration)

3) The Ingate has the ability to add/remove digits and characters from the Request URI Header. A typical scenario is the addition/removal of ENUM character "+". Many IP-PBX and ITSPs either need to add or remove this character prior to sending or receiving SIP requests. Here you can enter values to Match and remove from the Request URI.
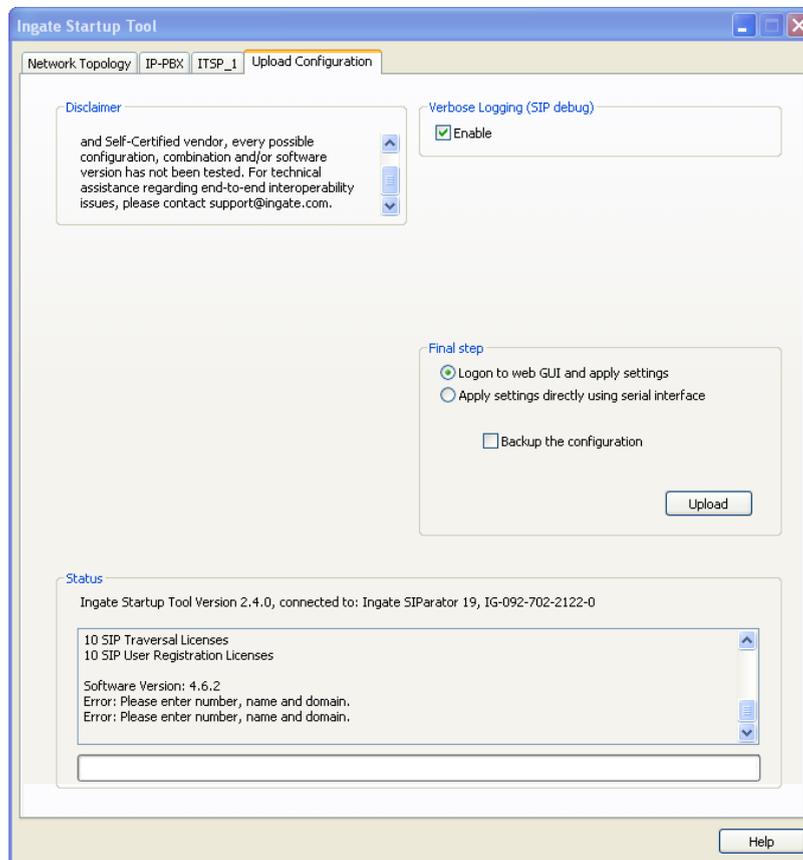

4) Some ITSP solutions may display additional fields.

4.8 Upload Configuration

At this point the Startup Tool has all the information required to push a configuration into the Ingate unit. The Startup Tool can also create a backup file for later use.

Configuration Steps:

1) Press the "Upload" button. If you would like the Startup Tool to create a Backup file also select "Backup the configuration". Upon pressing the "Upload" button the Startup Tool will push the configuration into the Ingate unit.
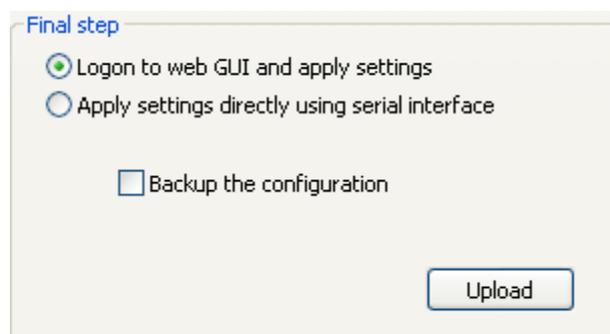
2) When the Startup has finished uploading the configuration a window will appear and once pressing OK the Startup Tool will launch a default browser and direct you to the Ingate Web GUI.

3) Although the Startup Tool has pushed the configuration into the Ingate unit, the changes have not been applied to the unit. Press "Apply Configuration" to apply the changes to the Ingate unit.
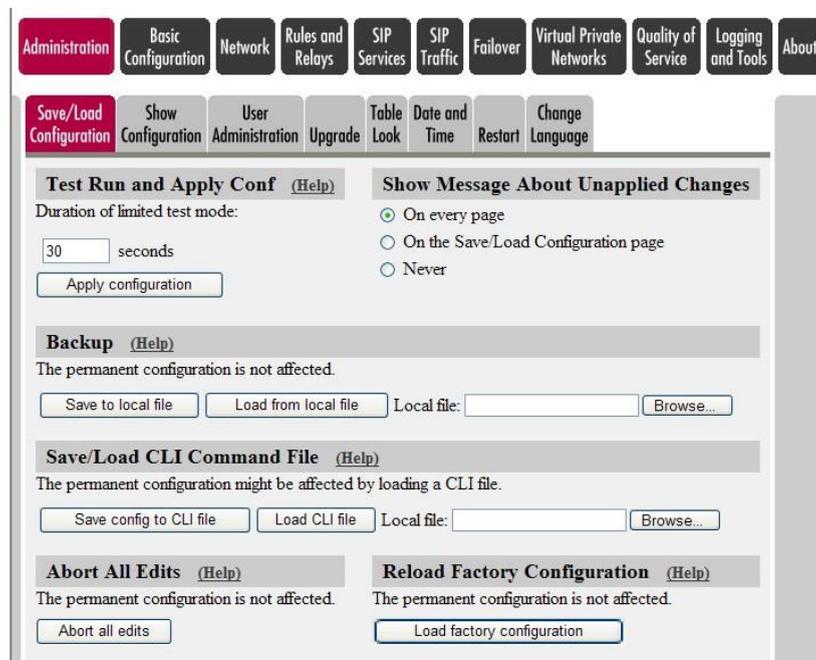
4) A new page will appear after the previous step requesting to save the configuration. Press "Save Configuration" to complete the saving process.

5 Troubleshooting

5.1 Ingate Startup Tool TG fails to start – missing runtime

If Ingate Startup Tool TG fails to start (reports missing runtime) please install required runtime library by opening the folder Ingate Starup Tool TG was installed in and double-click on vcredist_x86.exe in it.

5.2 Status Bar

Located on every page of the Startup Tool is the Status Bar. This is a display and recording of all of the activity of the Startup Tool, displaying Ingate unit information, software versions, Startup Tool events, errors and connection information. Please refer to the Status Bar to acquire the current status and activity of the Startup Tool.

5.3 While Configuring Unit for the First Time

Sometimes using the "Change unit's IP address" to connect to and assigning an IP Address and Password to the Ingate Unit can be a challenge. The Status Bar may display **"The program failed to assign an IP address to eth0"**.

Possible Problems and Resolutions

Possible Problems	Possible Resolution
Ingate Unit is not Turned On.	Turn On or Connect Power (Trust me, I've been there)
Ethernet cable is not connected to Eth0.	Eth0 must always be used with the Startup Tool.
Incorrect MAC Address	Check the MAC address on the Unit itself. MAC Address of Eth0.

Possible Problems	Possible Resolution
Ingate Unit already configured	"Change unit's IP address" only works on unconfigured (factory default) Ingate Units. Once you have configured the unit you need to use the "Change or update configuration of the unit" option of the Ingate Startup Tool TG to access the Ingate Unit.
Incorrect Password	Default password of the Ingate Unit is "admin" – unless you have changed it using option "Change unit's IP address" of the Ingate Startup Tool TG or using the Ingate Unit's web configuration interface.
Ingate Unit on a different Subnet or Network	The Startup Tool uses an application called "Magic PING" to assign the IP Address to the Unit. It is heavily reliant on ARP, if the PC with the Startup Tool is located across Routers, Gateways and VPN Tunnels, it is possible that MAC addresses cannot be found. It is the intension of the Startup Tool when configuring the unit for the first time to keep the network simple.
Despite your best efforts…	Change your PC's IP address to be on the 192.168.1.x subnet, and use the "Change or update configuration of the unit" option of the Ingate Startup Tool TG to access the Ingate unit at its factory default IP address 192.168.1.1 See chapter 4.3

5.4 Can't Apply Configuration

As the Ingate Startup Tool TG attempts to configure Trunk Groups it is vital that the Ingate unit being configured have the required Trunk Group licenses. Please make sure you have installed all required licenses, see chapter 4.2