

TELSTRA
BUSINESS SIP®
IAD INSTALLATION
GUIDE



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Introduction

The Business SIP product is designed to support analogue services using IADs (Integrated Access Devices). These IADs are connected as shown below.

Note: For detailed installation details for the SIP NTU, please refer to the Business SIP Installation Guide.

The IAD installation and configuration can be performed either by Telstra technicians, appropriately skilled customer technicians or Telstra nominated partners.

Below is a simplified view of a Business SIP solution using the two of the IADs currently available for use with the Telstra Business SIP product.

Note: This is not intended to convey a typical installation configuration, but provides a visual reference to how the various devices and systems connect.

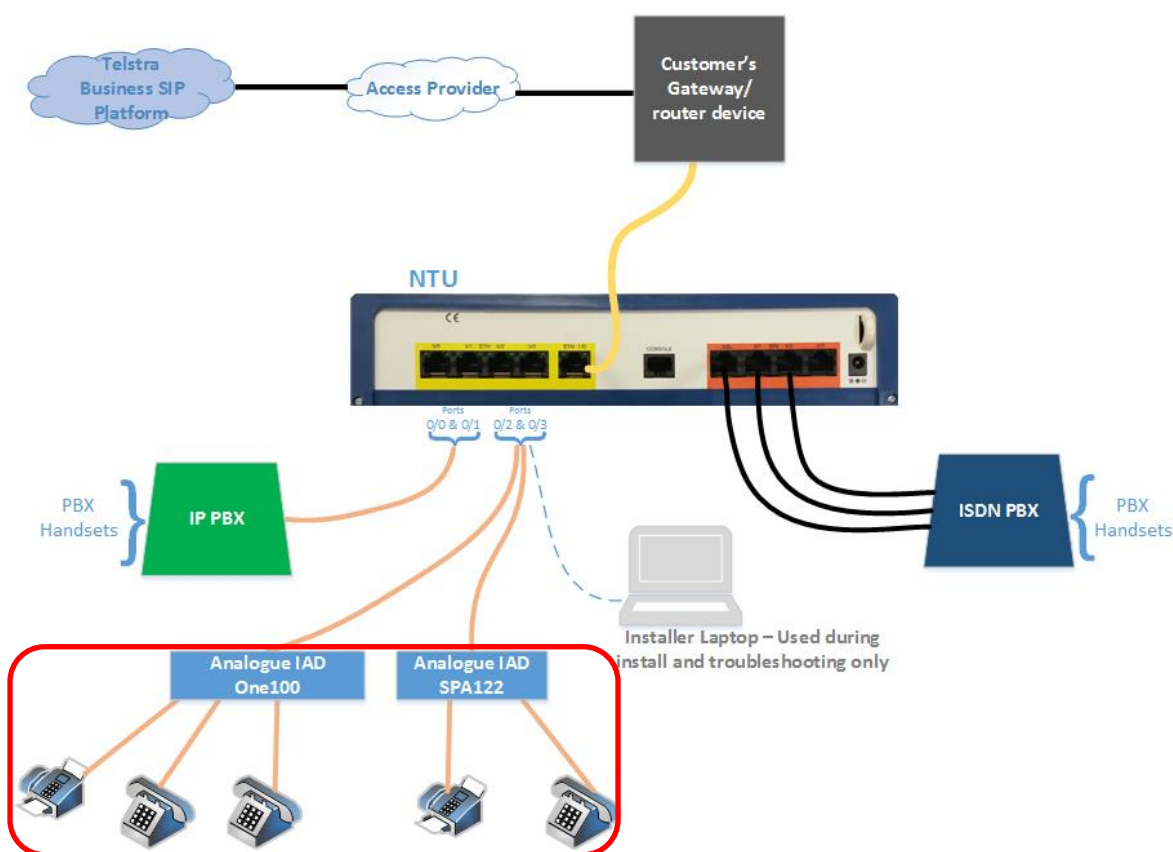


Figure 1: Business SIP Solution Overview showing IADs connected, lower-left
In the diagram above:

- The terminal equipment connecting to the IAD may be EFTPOS, or even back-to-base alarms (both not shown here) as well as faxes and telephone handsets.
Note: The correct 'Port Types' must be specified when ordering the product or the terminal devices may not function. For more details on Port Types, refer to section 1.
- The IADs are connected to the SIP NTU via either of the two DHCP enabled LAN ports 0/2 and 0/3.
- 'Customer's Gateway/router device' is a customer supplied device that connects the 'SIP Trunk' to the 'SIP NTU'.

- The SIP NTU is an optional device, in which case the IAD's will need to be connected to spare switch ports in the customer LAN. Refer to section 6.1 for additional steps that need to be taken for the IAD's to pick up their configurations.

Document Scope

This document covers the following information for both the Cisco SPA122/ATA192 and OneAccess On100; although there are some small differences that will be detailed in their respective sections:

- Descriptions of analogue port types applicable to the Telstra Business SIP product.
- Site preparation and environmental requirements
- Pre-installation checks
- Physical installation of the IAD.
- Configuration/registration/identification of the IADs to the Business SIP Platform

Except where specified, the following sections refer to both devices.

1 IAD Port Types for Business SIP

The ports on the IADs for Business SIP can be configured as any of the following:

- Voice
- Fax
- EFTPOS
- B2B alarm

Important note: The configured port can only function as assigned; the port type must therefore be confirmed at the time of ordering the Telstra Business SIP service. For example, fax calls on a port designated for voice will often fail.

There are some exceptions, as follows:

- Fax and EFTPOS share the same settings and will be designated as "Data" on the customer portal.
- On the One100, all port types share the same settings due to its auto-sensing capabilities. If some tweaking is required in future, the settings may change so it is still important to get the selection correct.

2 Site Preparation

The following conditions should be observed when locating the equipment:

- The device must be installed within two metres of a dedicated mains power outlet.
- The device will need shelving or desk space of approximately 300mm x 300mm, ensuring that there is sufficient ventilation. Do not stack devices directly on top of each other.
- Do not place the unit close to a heat source or in direct sunlight.
- Avoid locations exposed to heavy soiling due to exhaust from machinery, airborne particles from industrial processes or excessive dust.
- To ensure adequate airflow through the unit, please ensure that the ventilation holes are unobstructed at all times.

3 Pre-Installation

Before commencing the installation:

- Check the IAD to ensure that all components have been included and that the device has no obvious physical damage.
- Identify and reconfirm the gateway/internet access device/SIP NTU that is providing a working network connection and that it is within 2 meters of the IAD installation location.
- Obtain the device ID and password from the Business SIP Portal¹ using the login and password provided via email. (Only applicable to the OneAccess One100 IAD)
- Confirm that any relevant existing cable(s) are labelled with the correct port no. / port type / telephone number(s).
- To confirm the physical port allocation for the device being installed, refer to the Business SIP Portal and navigate to the 'Analogue Lines' tab.
- **Ensure that the SIP NTU is fully installed configured, powered up and operational BEFORE installing and powering up the IAD for the device to be assigned an IP address.**
- **For Stand-alone IAD's configurations, without a SP NTU, refer to section 6.1 for additional steps required.**

¹ Access the [Telstra Business SIP Customer Management Portal](https://portal.mycalling.telstra.com/login) via the link (<https://portal.mycalling.telstra.com/login>). Once logged in, navigate to the 'Analogue Lines' tab, then select 'Get credentials'. Further details are available in section 6 page 28.

4 One100 IAD Description, Installation and Login

This section describes the device and its connections as well as physical installation, provisioning and logging in to the web GUI of the OneAccess IAD.

4.1. Physical Description

The following figure shows the front panel of ONE100 SX5E with 8 FXS voice interfaces:



Figure 2: OneAccess IAD

4.1.1. Front Panel LEDs

The One100 has a set of LEDs that indicate the status of the device and connectivity.



Figure 3: One100 Front Panel LED indicators

The list below describes the use of each LED:

LED name	Description
Status	Indicates Operational status of device.
Uplink	Indicates uplink status of 1/0 Ethernet port.
IP	Indicates the logical state off all IP interfaces available within the device including Loopback and Null interface.
WLAN	Not used
AUX	Indicates auto-update status, during and after the process
COM	Indicates device SIP status and communication progress of voice ports.

4.1.2. Rear Panel Interfaces

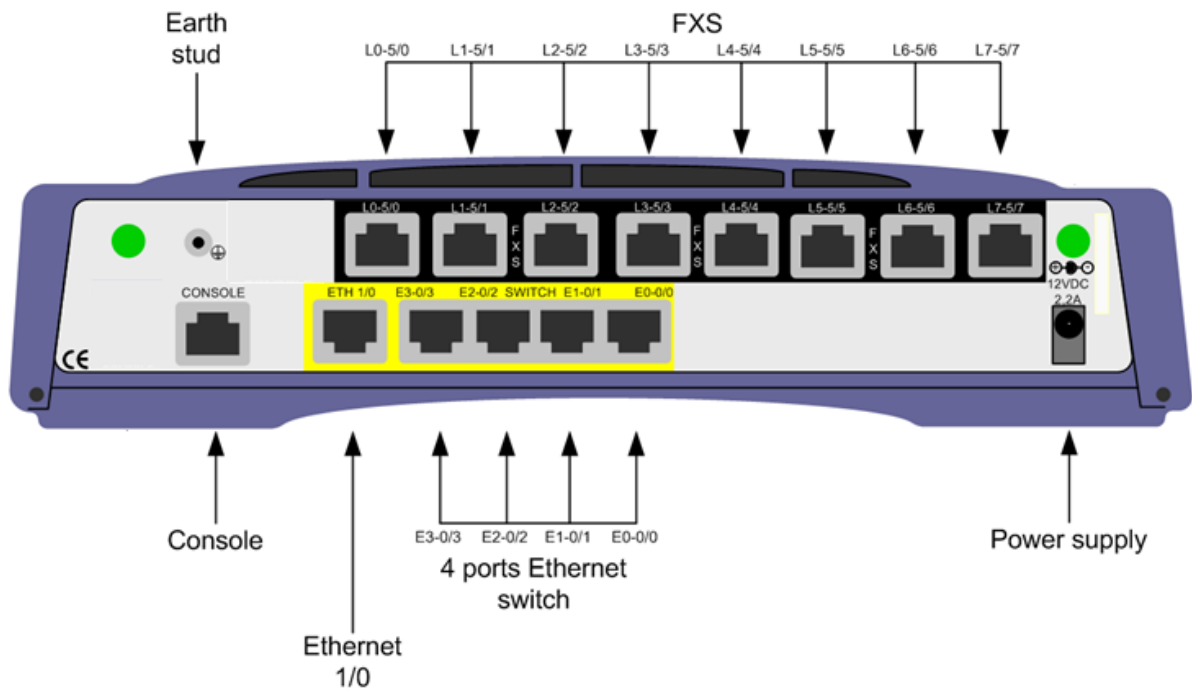


Figure 4: One100 SX5E 8V - Rear View

Following connectors are available at the rear panel:

Interface type	Interface identification	Type	Function
Console	CONSOLE (not used)	RJ45	V.24 DTE interface
Ethernet	ETH 1/0	RJ45	Ethernet LAN connector
4 port Ethernet Switch	SWITCH 0/0 ... 0/3	RJ45	4 Ethernet LAN connectors
FXS	FXS L0-5/0 to L7-5/7 (8 ports)	RJ45	8 analogue telephone interfaces
WLAN	Not used	SMA	Wireless LAN connectors (optional)
Power	12V-2,2A	DC input jack	Power input
Earth stud		Clinching stud/screw hole	Earth connection

4.2. Physical Device Installation and Login

The basic steps for connecting the OneAccess IAD are below, however it is important to note that each port is configured for a particular type of device and that devices may not function properly if not plugged into the assigned port:

Important notes:

1. *The SIP NTU **MUST** be fully installed configured, powered up and operational BEFORE installing and powering up the IAD for the device to be assigned an IP address.*
2. *Ensure that each device is plugged into the assigned port. (Refer to the Business SIP CSM Portal – ‘Analogue Lines’ tab, for port assignments.)*

Step	Action	
1	Connect one end of an Ethernet cable to the stand-alone Ethernet WAN (1/0) port on the IAD. Connect the other end of the Ethernet cable to the SIP NTU (ports 0/2 or 0/3).	
2	Power up the IAD.	
3	WAIT, once boot up, device will automatically download configuration file from DMS bootstrap URL directory and then reboot (Takes max 5 minutes). Note: If this is a Stand-alone IAD configuration without a SIP NTU, refer to section 6.1 for additional steps required.	
4	Connect the PC/laptop to the IAD using an Ethernet cable to connect to any LAN Ethernet port on the IAD.	
5	Your PC will be automatically assigned an IP address in the 192.168.1.xxx range.	
6	Open a web browser and enter the IP address 192.168.1.1 in the address field.	
7	Once the login page (shown at right) is presented enter the following: Username: admin Password: admin	
8	Go to Auto Update page, enter credentials provided by Telstra (available via the Business SIP Customer Management Portal) and click on the Apply button. The device will automatically contact the Business SIP Platform, download the configuration file and reboot when it detects the downloaded configuration is different to the one currently on the box.	
9	After the device reboots (max 2 minutes), confirm that the IAD is configured for the Telstra Business SIP Platform network (lines will be registered) If the Business SIP service is New (not a migrating service) make test calls both incoming and outgoing on a telephone handset or by using a fax. If the Business SIP service is migrating from another product, such ISDN, you will need to complete number migration before testing will be possible.	

Note: The IAD will reboot a minimum two times to download final configuration file with one additional reboot dependent upon firmware comparison (e.g. if the current device software is not the latest one available in the Business SIP Platform).

4.3. Device Factory Reset

In the case where the auto-update fails e.g. configuration or software file download has been interrupted and/or for any other unknown reason, follow the instructions below to restore the device to factory default settings.

The OneAccess device is delivered with the factory default folder stored on the device Flash containing Telstra default configuration files. When resetting the device to factory default, those files will be loaded and applied to the system.

After the factory default restore the device will reboot and start to communicate to the Business SIP Platform to obtain the device associated bootstrap config file. Note that after the factory reset and before the configuration update, the device can only be accessed through the factory default password.

4.3.1. WEB GUI Factory Default Restore Process

To restore the One100 to factory settings, login to the device as per the steps in section 4.2 above and navigate to the Settings page. As shown below, click the Apply button next to Factory Reset and confirm 'OK' when prompted (not shown) and then wait for the device to reboot (1-2 minutes).

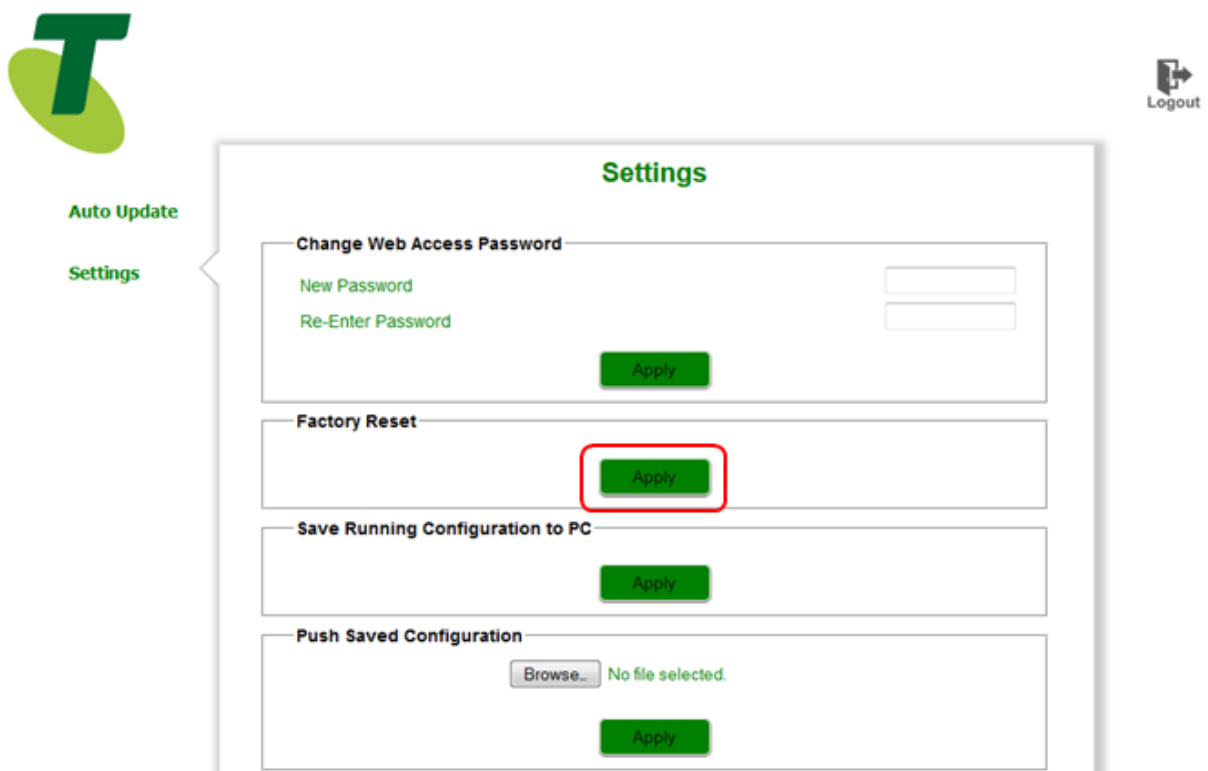


Figure 5: Web Device Factory Reset

5 Cisco SPA122 / ATA192 IAD Installation

The SPA122 & ATA192 are analogue IAD's with ports for two devices. The ATA192 replaces the SPA122, which is ceasing manufacture. These devices do not require credentials on installation; as identification to the Business SIP Platform is via the device's unique MAC address. This unique MAC address associates the device with a specific Business SIP customer site, meaning that devices are not interchangeable without pre-configuring the Business SIP platform with the device's MAC address.

Note: The SPA122 & ATA192 require TFTP to retrieve their configuration. Ensure that TFTP is not blocked on any router/firewall. The TFTP uses port 69 plus random ephemeral high ports.

The two devices are identical in most aspects. This section describes the devices, their connections, physical installation and factory reset. Also covered is the process to swap device types, which may be necessary in certain circumstances.



Figure 6: Cisco SPA122 (ATA192 almost identical)

5.1. Installing device

Important note: BEFORE CONTINUING, the SIP NTU MUST be fully installed configured, powered up and operational before installing the IAD for the device to be assigned an IP address. If this is a Stand-alone device with a SIP NTU then refer to section 6.1 for additional steps to be taken.



Figure 7: Cisco SPA122/ATA192 Rear connections

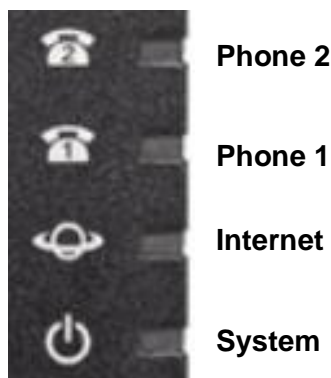
Connect your device using the ports on the back panel, ensuring that the correct device is plugged into the correct port. Refer to the Business SIP CSM Portal – ‘Analogue Lines’ tab, for Port Assignments.

- Use the PHONE 1 and/or Phone 2 port to connect an analogue phone, fax machine, back to base alarm or EFTPOS with an RJ-11 telephone cable, in the order shown on the customer portal.

- The ETHERNET port is not used for Business SIP setup.
- The INTERNET port connects to your SIP NTU (or switch/router LAN port if no SIP NTU)

5.2. Status LEDs

The status indications of the device LEDs will present connectivity and operational conditions and these are described below.



Phone1/Phone2 LED's	SPA122	ATA192
Steady green	On hook	On hook
Slow flashing green	Off hook	Off hook
Fast flashing green three times, then repeats	N.A.	The analogue device failed to register
Off	Port not ready	Power is off

Internet LED	SPA122	ATA192
Flashing green	Transmitting or receiving	Transmitting or receiving
Off	No link	No link

System LED	SPA122	ATA192
Steady green	System ready, IP address acquired	System ready, IP address acquired
Slow flashing green	Acquiring IP address (by default uses DHCP)	System is booting up
Fast flashing green	Upgrading firmware	N.A.
Fast flashing green three times, then repeats	N.A.	System failed to boot up
Off	No power or system cannot boot up	Power is off

Problem Report Tool (PRT) LED	SPA122	ATA192
Flashing red	No LED	Not in use. If flashing red, press it and it will go solid red

5.3. Factory Reset

To reset the SPA122 or ATA192 to factory defaults follow these steps:

1. Plug in power adapter.
2. Plug in a phone to 'Phone 1' port of the device.
3. Dial ****
4. You should hear 'Configuration Option Menu'
5. Dial 73738# (**RESET#**)
6. Press 1 to confirm the **reset**.

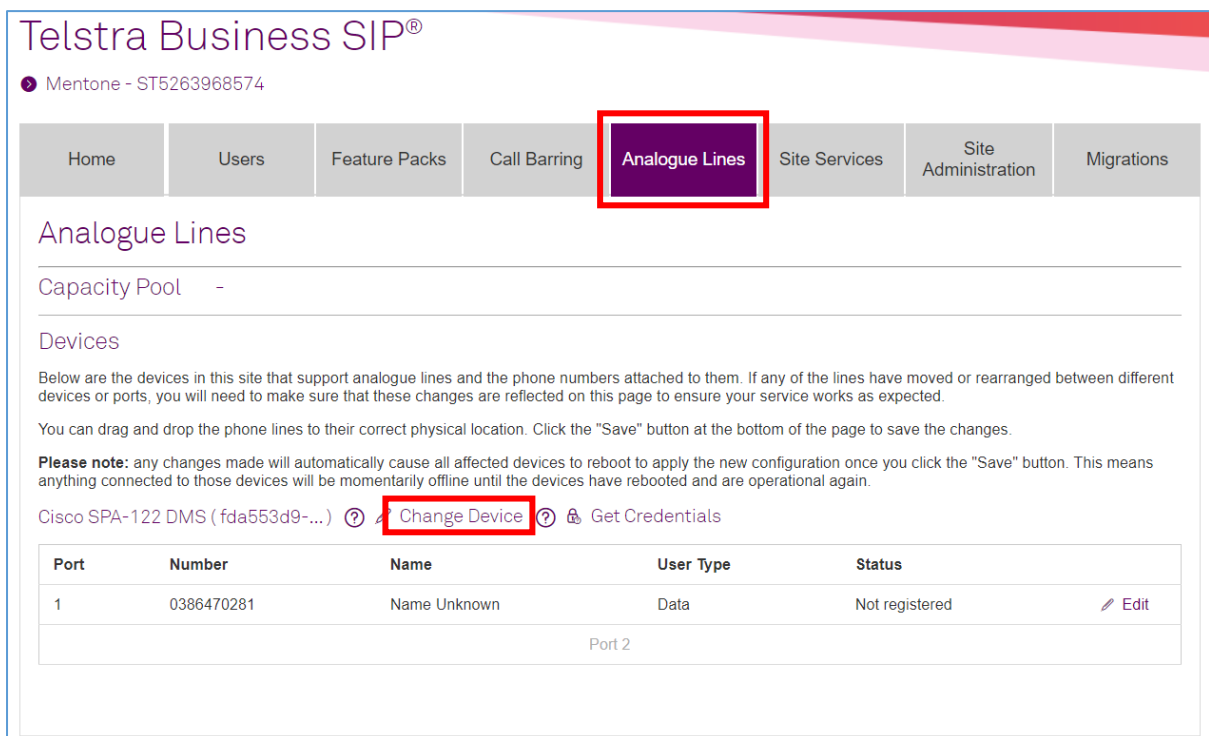
5.4. Change Device Type

There may be circumstances when a provisioned device needs to be changed to a different device type. The options are:

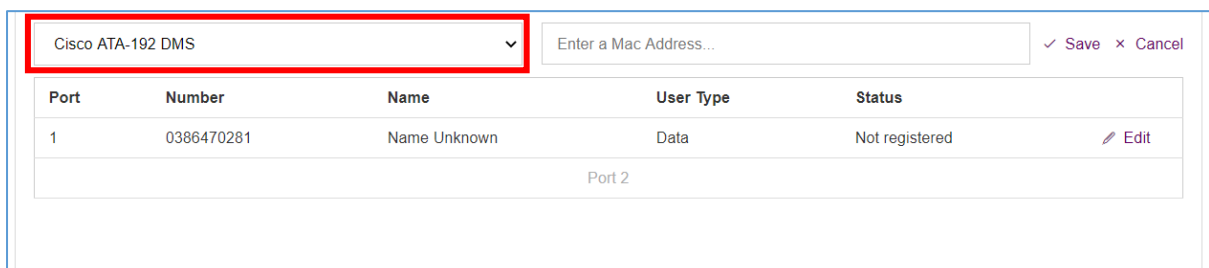
- change SPA122 to ATA192
- change ATA192 to SPA122

The change is orchestrated via the Business SIP Customer Portal. Customer or Site credentials are needed to log in.

Once logged in, navigate to the “Analogue Lines” tab, as per the figure below. The device to be changed needs to be visible. In this example, it is a SPA122. Click on “Change Device”.



Choose the only option, in this case, Cisco ATA192 DMS.



Enter the MAC address from the label on the new device. In the example below, there are too few digits – there should be 12 hexadecimal characters (with no symbols).

Cisco ATA-192 DMS

✓ Save × Cancel

Port	Number	Name	User Type	Status
1	0386470281	Name Unknown	Data	Not registered ✎ Edit
Port 2				

This results in an error message.

Cisco ATA-192 DMS

✓ Save × Cancel

Port	Number	Name	User Type	Status
1	0386470281	Name Unknown	Data	Not registered ✎ Edit
Port 2				

The MAC Address needs to be 12 hexadecimals

Re-entering the full 12 digits, results in a confirmation popup, and a “Saving your changes...” message.

Cisco ATA-192 DMS

Port	Number	Name	User Type	Status
1	0386470281	Name Unknown	Data	Not registered ✎ Edit
Port 2				

⌄
Saving your changes...

However, in this case the MAC address is already used. This results in a different error message.

Cisco ATA-192 DMS
561CB0D80957
✓ Save × Cancel

Port	Number	Name	User Type	Status	
1	0386470281	Name Unknown	Data	Not registered	Edit
Port 2					

MAC Address is in use by another device: 561CB0D80957

If this is definitely the correct MAC address, then it will be necessary to contact the Business SIP help desk on 1800 790 831 to have the conflicting MAC address deleted.

Once successfully completed, the ports or ports should automatically register within several minutes.

5.5. Change MAC address

The change device functionality described in 5.4 can also be used to change the MAC address of an existing device. This may be necessary, for example, where a faulty device is being replaced. To do so, change the device type to the other type, then change back with the MAC address of the replacement device. Between these two steps it is necessary to navigate out of the “Analogue Lines” tab, then navigate back in.

6 Appendices

6.1. Stand-alone IAD installation

Stand-alone single or multiple IAD's is an orderable Business SIP configuration.

Installation is no different than already described, except in the situation where the router is not a standard Telstra Business Broadband Netgear V7610 gateway. At the time the IAD is requesting an IP address, it is also expecting to be delivered Option 66 and 160 responses which provide the URL for the location of the device configuration files on the Telstra device management server. The customer router must be pre-configured with these Option 66 and 160 settings before the IAD's can be installed.

This information is already provided in the "Telstra Business SIP Customer Detailed Integration Guide" and is reproduced below.

The following DHCP configuration is required for all routers (except the Telstra Netgear V7610) if connecting the OneAccess One100 8-Port or the Cisco SPA122/ATA192 2-port into a LAN behind a 3rd-party router.

If the One100 8-port IAD is being used then DHCP Options on the router must be configured as shown in the table.

DHCP OPTION	FIELD FORMAT	VALUE
Option 160	ASCII	http://polydms.digitalbusiness.telstra.com/dms/bootstrapV4

If the SPA-122 or ATA192 2-port IAD is being used then DHCP Options must be configured on the router as shown in the table. Only one is needed – option 160 is preferred.

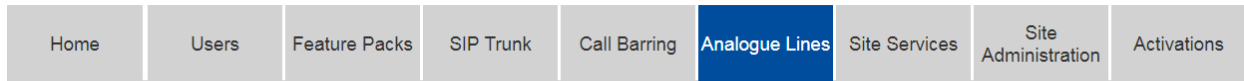
DHCP OPTION	FIELD FORMAT	VALUE
Option 66	ASCII	dms.digitalbusiness.telstra.com
Option 160	ASCII	http://polydms.digitalbusiness.telstra.com/dms/bootstrapV4

If a working V7610 or SIP NTU are available elsewhere, then the IAD's can be pre-installed & tested behind it, before being taken to the customer site.

If a device needs to be factory reset, then the subsequent re-installation requires the same access to Option 66 or 160 responses.

6.2. Retrieving the One100 IAD ID and Password

To retrieve the device ID and password (also referred to as 'device credentials', log in to the Business SIP Customer Management Portal (<https://portal.mycalling.telstra.com/login> using your Administrator username and password) and navigate to the **Analogue Lines** tab as shown below.



The device ID and password can be accessed by clicking **'Get Credentials'** as shown in the screen below:

This section describes how the related information is presented and shows a gateway and two IADs with their respective phone numbers.

Analogue Lines

Capacity Pool 1

Devices

Below are the devices in this site that support analogue lines and the phone numbers attached to them. If any of the lines have moved or rearranged between different devices or ports, you will need to make sure that these changes are reflected on this page to ensure your service works as expected.

You can drag and drop the phone lines to their correct physical location. Click the "Save" button at the bottom of the page to save the changes.

Please note: any changes made will automatically cause all affected devices to reboot to apply the new configuration once you click the "Save" button. This means anything connected to those devices will be momentarily offline until the devices have rebooted and are operational again.

Netgear V7810 (122b6fb1-...) ⓘ ⚙ Get Credentials

Port	Number	Name	User Type	Status	
1	0358718709	Name Unknown	AnalogueVoice	Registered	✎ Edit
2	0358718710	Name Unknown	AnalogueVoice	Registered	✎ Edit

Cisco SPA-122 (46565458-...) ⓘ ⚙ Get Credentials

Port	Number	Name	User Type	Status	
1	0358718700	Name Unknown	AnalogueVoice	Not registered	✎ Edit
2	0358718701	Name Unknown	AnalogueVoice	Not registered	✎ Edit

OneAccess-100 8-Port (ff69a6da-...) ⓘ ⚙ Get Credentials

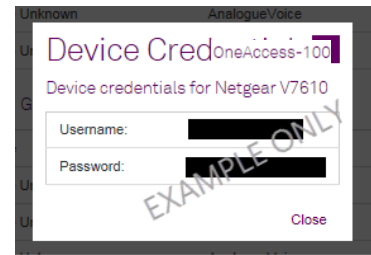
Port	Number	Name	User Type	Status	
1	0358718702	Name Unknown	AnalogueVoice	Not registered	✎ Edit
2	0358718703	Name Unknown	AnalogueVoice	Not registered	✎ Edit
3	0358718704	Name Unknown	AnalogueVoice	Not registered	✎ Edit
4	0358718705	Name Unknown	AnalogueVoice	Not registered	✎ Edit
5	0358718706	Name Unknown	AnalogueVoice	Not registered	✎ Edit
6	0358718707	Name Unknown	AnalogueVoice	Not registered	✎ Edit
7	0358718708	Name Unknown	AnalogueVoice	Not registered	✎ Edit
Port 8					

Clicking the  [Edit](#) icon presents the **User Details** page, where you can update the user name.

Clicking **Get Credentials** opens a pop-up window presenting the username and password.

Note: Keep these details strictly confidential as the integrity of your device depends on this information.

Figure 8: 'Get Credentials' pop-up example



6.3. Troubleshooting

Use the table below to resolve or triage any basic issues before requesting assistance. Take note of what step you were up to when you identified an issue as it could help to identify the possible cause.

Step	Problem	Action	Resolution
1	The unit has been delivered but it may not be the correct device.	Check the paperwork that came with the device against the customer order.	If the product code does not match, follow the process described in: 6.4 Faulty Hardware
2	Inspection of contents to confirm that no parts are missing.	Check that the device, the power cord and the Ethernet cable are in the box.	If device or power cord are missing, follow the process described in: 6.4 Faulty Hardware
3	The unit may be damaged.	Inspect the casing and interface ports.	If damaged, follow the process described in: 6.4 Faulty Hardware
4	The Ethernet cable doesn't work.	Try another Ethernet cable to prove.	Replace the Ethernet cable as required.
5	The power pack doesn't work.	Plug into an alternative wall socket and check the IAD STATUS/Power LED is on.	If still not working follow the process described in: 6.4 Faulty Hardware
6	The One100 IAD Username and password is not accepted.	Re-enter the default Username and Password "admin" and "admin".	If re-entering doesn't work contact the Support team.
7	Device ID and password are accepted but the IAD doesn't register.	Refer to the Customer Detailed Integration Guide (available on the Telstra Support website https://enterprise-support.telstra.com.au) for methods of testing connectivity to the Business SIP platform. See the section called " DHCP Option to support IADs "	For further assistance contact Telstra Support via the number below.
8	The device doesn't work as expected.	Check the device is plugged into its assigned port; where necessary, referring to the Business SIP CSM Portal – 'Analogue Lines' tab. Try the device outside Business SIP where possible to isolate the issue.	For further assistance contact Telstra Support via the number below.

Telstra Business SIP® Support - (1800 790 831)

6.4. Faulty Hardware

In the event that a device does not power up or fails to register, **Customer-nominated technician/Telstra nominated partners** should contact Telstra on **(1800 790 831)** to confirm the device condition. The support staff can assist with arranging a replacement device if needed.

Telstra technicians should follow Telstra internal procedures.

7 Glossary

Term	Definition
B2B	'Back to Base' referring to a type of alarm system
BRA/BRI	Basic Rate Access (BRA)/Basic Rate Interface (BRI) Refers to "BRI" in the OneAccess SIP NTU GUI.
Business SIP	SIP transmission over access
Business SIP Platform	The technology that supports the Business SIP product.
CPE	Customer Premises Equipment
CSM Portal	Customer Service Management Portal – Used by customers Administrators to configure the Business SIP product
Device credentials	Refers to the username/password required to access the Business SIP Platform server to download the configuration file for a device.
DHCP	Dynamic Host Configuration Protocol
EFTPOS	Electronic Funds Transfer Point of Sale
IAD	Integrated Access Device
IP	Internet Protocol
HTTP	Hypertext Transfer Protocol
NAT	Network Address Translation
NTU	Network Termination Unit
SIP	Session Initiation Protocol
Telstra Business SIP	Telstra retail product name for SIP transmission over access
WAN	Wide Area Network

8 Document Control Sheet

Issue no.	Issue date	Nature of Amendment
1.0		Initial release
2.0	28 Oct 2020	Introduce ATA192