

Managed Private APN

Product & Technical Specifications

Overview

The SIMcontrol [Managed APN](#) is an enterprise Private APN-as-a-Service.

Revision 2.5



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1. Activation Process

Standard APN with Pooled Data

(Dynamic SIM IP's, Normal internet breakout, Pooled Data)

- a. Open a SIMcontrol [account](#).
- b. Order your Vodacom or MTN SIMs through us, or use existing SIMs.
- c. [Request](#) the Managed APN to be enabled on your SIMcontrol account.
- d. For existing Vodacom contract SIMs, [send](#) our support team the list of numbers (MSISDN's) to be provisioned by the network for the Managed APN. (MTN and Vodacom prepaid/Business Flexi SIMs are provisioned automatically when added to the correct network on SIMcontrol).
- e. Contact our support team for a quick APN on-boarding session where suitable custom Quota Rules, Pooled Data refill or SIM Data top-ups will be set up.
- f. Update your device APN settings (see 3.)
- g. Boot up or restart device.
- h. After a few minutes, check the SIM profile page to see if data sessions are showing and if the device is connecting.

Activation Process - Custom APN

Custom APN

(Fixed IP range, custom firewalling, custom data routing or VPN requirements)

- a.** Discuss customisation options and costs with our Sales or Customer Success teams.
- b.** After accepting the commercial terms, they will assist you to complete the APN Solution document. This will confirm information such as SIM IPs, IP security, data routing, destination IP whitelisting, VPN requirements etc.
- c.** This may involve a technical scope meeting if required.
- d.** The APN Solution document will be accepted and signed prior to any config or custom settings being implemented.
- e.** After technically approved by the SIMcontrol engineering team, implementation timelines will be agreed.
- f.** After the first batch of SIMs are loaded by the customer a 7 days UAT (user acceptance testing) will commence after which the UAT section of the Solution Document is signed by the customer, confirming that the service is performing as expected. Only then will the on-boarding project be closed and handed over to our Customer Success Team.
- g.** Changes after UAT acceptance would require a change request, which may incur a change fee.

2. SIM Tariffs Types

The following SIM types can be activated on the SIMcontrol Managed APN (existing SIMs or supplied by us)

a. Vodacom Business Flexi SIM

- 14-digit (IoT) MSISDN

b. Vodacom APN contract SIM (excluding standard CBU Hybrid/Top-up SIMs)

- 10-digit or 14-digit (IoT) MSISDN
- Direct with Telco or on-billed through SIMcontrol

c. Vodacom prepaid SIM

- Be aware of SIM expiry. Ask us about Business Flexi options

d. MTN Business Flexi SIM

- 10 or 14 digit MSISDN
- Month-to-month contract, on-billed through SIMcontrol

e. MTN Contract SIM

- 10 or 14 digit MSISDN
- Direct with Telco or on-billed through SIMcontrol
- The APN will not work on prepaid or consumer based (standard) MTN contract SIMs

3. Device APN Settings

Pooled Data (Vodacom or MTN)

Reverse-billed APN

APN name on device: **flickswitch**

Username: [blank]

Password: [blank]

SIM Data (MTN only)

Forward-billed APN

APN name on device: **one**

Username: [blank]

Password: [blank]

(Reboot device after changing APN settings)

** Ensure device settings do not default to public APN's ("internet" / "vlive" / mymtn") on reboot. Public APN's may be de-provisioned on SIMs on request.*

Detailed APN settings:

For manually programmed firmware

Vodacom SIM card

APN Carrier=Vodacom

MCC="655"

MNC="01"

apn="flickswitch"

user= [blank]

password=[blank]

authtype="PAP"

type="default,supl,xcap"

MTN SIM card

APN Carrier=MTN

MCC="655"

MNC="10"

apn="flickswitch" or "one"

user= [blank]

password=[blank]

authtype="PAP"

type="default,supl,xcap"

4. SIM Radius Management & Firewalling

a. Standard Configuration:

- Fully managed IP service (with DNS provisioning) from a shared IP pool
- Dynamic Private IP addresses (not public IP)
- Standard internet breakout - allows traffic to all destinations i.e. 0.0.0.0/0
- No traffic logging or monitoring (limited troubleshooting)

b. Custom Configuration Options: (as described in Solution Document)

1) Dedicated Subnet/CIDR block

- Fixed Private SIM IP addresses (not public IP's)
- Advanced tracing & troubleshooting
- Option: Route all traffic to specific IP / endpoints
- Option: Domains (FQDNs) or destination IP whitelisting. Only open traffic for specific destination domains or IP's.

2) Application filtering

- Domain blocking of various public websites and applications (*best effort - based on changing parameters. Not guaranteed to block 100% of such traffic*)
- Up to 20 filtering groups per account

3) Site-to-Site VPN / IPsec or Data Centre cross-connect

- Local peer gateways directly to customer network or dedicated server (site-to-site).

5. SIM Radius, IP & Firewalling

c. External (public) SIM IP's may come from various 3rd party providers (Including Teraco South Africa, Silicon Sky, Amazon Frankfurt, Amazon Ireland, Google Cloud Frankfurt, Google Cloud Belgium). Websites & server firewalls will need to allow these IP's. Please test as some services may block traffic from these IP's.

d. Vodacom and MTN SIMs are allocated separate SIM IP ranges, and are not on the same private IP subnets. SIMs from different mobile networks will not be visible to each other your account's private IP range or subnet.

e. Traffic blocking: Should SIMs try and access websites/domains/IP destinations that are not whitelisted, it will still incur a small amount of network traffic (the request from the SIM to the firewall, and the denied request back to the SIM). To minimise these "blocked" requests, please ensure devices are locked down as much as possible to not originate traffic to disallowed sites/IPs.

6. Session Data & Quota Update Frequency

Pooled Data ("flickswitch" APN)

- a. Accounting intervals are every 60 seconds from the network.
- b. SIMs may allow up to 60 seconds of data flow before session is terminated.
- c. Because of this, a small data “overage” may be billed to your data pool once a session has ended.
- d. Data session history is shown on the SIM profile page, including live session status and connectivity error messages.
- e. SIM quota balances are continuously monitored, as long as SIM is trying to connect.
- f. If SIM is not trying to connect, quota balance is checked every 2 hours.
- g. Multiple Quota Rules with different usage caps can be set up. A SIM can only be linked to one Quota Rule.
- h. Quotas work on a calendar month cycle and are reset just after midnight of each new calendar month.
- i. If a SIM reaches its quota limit and is not allowed additional quota, it will stop working within +-60 seconds.
- j. SIMs can instantly topped up with additional quota (automatically or manually) on the platform.

7a. Pooled Data

"flickswitch" APN

a. Pooled Data shared between Vodacom and MTN SIMs - All SIMs consume data from a single shared pool (reverse-billed).

Billing increments are 1KB.

b. Pooled Data bundles can be purchased ad-hoc (manually) or by using an automated Refill Rule.

c. Pooled Data bundle sizes can be changed at any time (up/down) as your requirements change. There are no long-term commitments.

d. Unused Pooled Data expires after 30 days. If your bundle size is correctly set up, there should be no data expiry.

e. If the balance of the Pooled Data bundle falls below a specified threshold level, the Refill Rule will automatically make another Pooled bundle available should the rule allow.

f. Total available data and daily data usage (data burn rate) can be viewed on the APN screen.

h. A minimum data reservation per SIM is made on the Data Pool before any connection attempt. The Data Pool needs to have at least this balance available. The reservation amount will be confirmed on APN setup and is shown on the Refill Rule settings. More on data reservation [here](#).

7b. SIM Data

"one" APN

- a. Only available on MTN enterprise tariff plans
- b. SIMs consume data from the bundle on the SIM (forward-billed). Minimum billing increments are 10KB per session
- c. SIM Data bundles can be purchased ad-hoc (top-up bundles on Business Flexi SIM) or on a data contract.
- d. Top-Up bundles can be loaded manually or by using an automated Usage Rule when the SIM balance drops below a specified balance.
- e. Unused SIM Data bundles expires as per the data bundle rule (typically 30 or 60 days).
- f. SIM Data balances are refreshed 3 x daily and can be viewed on SIMcontrol. Live balance checks can be done on SIMcontrol.
- g. Data usage is calculated by actual data flowing through the APN.
- h. If using SIM Data, ensure device is not set to use public APN data (i.e. "internet" / "mymtn") as device will then connect to public APN
- i. APN session information is displayed on the SIM profile
- j. **Suggestion:** De-provision public APN on SIM profile. Contact us about options to de-provisioning public APN, so that SIMs can ONLY consume data through the Managed APN.

8. Airtime Balances

Required should you wish to send SMS's from a device

- a.** Vodacom prepaid, Vodacom Business Flexi, MTN Business Flexi SIMs: The airtime balance shown is standard network airtime available for voice or SMS.
- b.** You can set up a specific recharge rule to monitor and recharge airtime balances.
- c.** Business Flexi SIMs requires an airtime balance to be able to originate a SMS, voice call or data roaming. (No out-of bundle billing is allowed)
- d.** On standard contract SIMs, voice (if enabled), SMS and data roaming (if enabled) is billed against the SIM account.

9. International Data Roaming

- a. Managed APN SIM can be allowed to data roam in specific countries.
- b. Roaming data is billed against normal airtime, loaded to each SIM using an automated airtime rule.
- c. Pooled data is not used when roaming

Important: SIMs need to be activated in South Africa and need to attach on the local network before roaming commences. SIMs cannot be activated for the first time on a roaming network.

Not all countries are enabled for roaming on Managed APN SIMs. Please contact us for the list of countries covered, and to discuss your roaming requirements on either APN SIMs or alternative global roaming SIM options.

More on data roaming [here](#).

10. NB-IoT

- a.** Vodacom SIMs (prepaid, Business Flexi or standard contract) can be enabled for NB-IoT on the SIMcontrol Managed APN.
- b.** NB-IoT connectivity will work on either dynamic (open internet) or fixed IP (with firewalling) APN options.
- c.** For more info on NB-IoT technical setup, please go [here](#).

11. IMEI Lock

- a.** By using the IMEI lock feature, a SIM will only allow pooled APN data to be consumed if it is in that specific device.
- b.** If the SIM is placed in any other device it will not connect to the Managed APN. T
- c.** The SIM can still access Public APNs if it has a normal data bundle or airtime available, and if Public APN's have not been deprovisioned.

More on how IMEI Lock works [here](#).

12. Inhibitors

The following inhibitors can be loaded on to contract SIMs. When using your own existing SIMs, it is strongly suggested to disable all services that are not needed on a SIM. This must be requested directly with the Telco in writing (typically when ordering SIMs).

- *OOB (Out of bundle billing)*
- *Voice (make or receive calls)*
- *SMS (send SMS)*
- *USSD (send or receive USSD)*
- *Public / 'internet' APN (if you want to lock SIM to the Managed APN)*
- *WASP / OTT services*
- *MMS*
- *vLive services (Vodacom)*

It is suggested to rather consider using one of our APN-optimised Business Flexi SIM options, where provisioning is managed.

13. API

You can access a range of SIMcontrol functions directly through our API. This allows you to integrate directly with the SIMcontrol SIM management system or to display SIM information on your own systems.

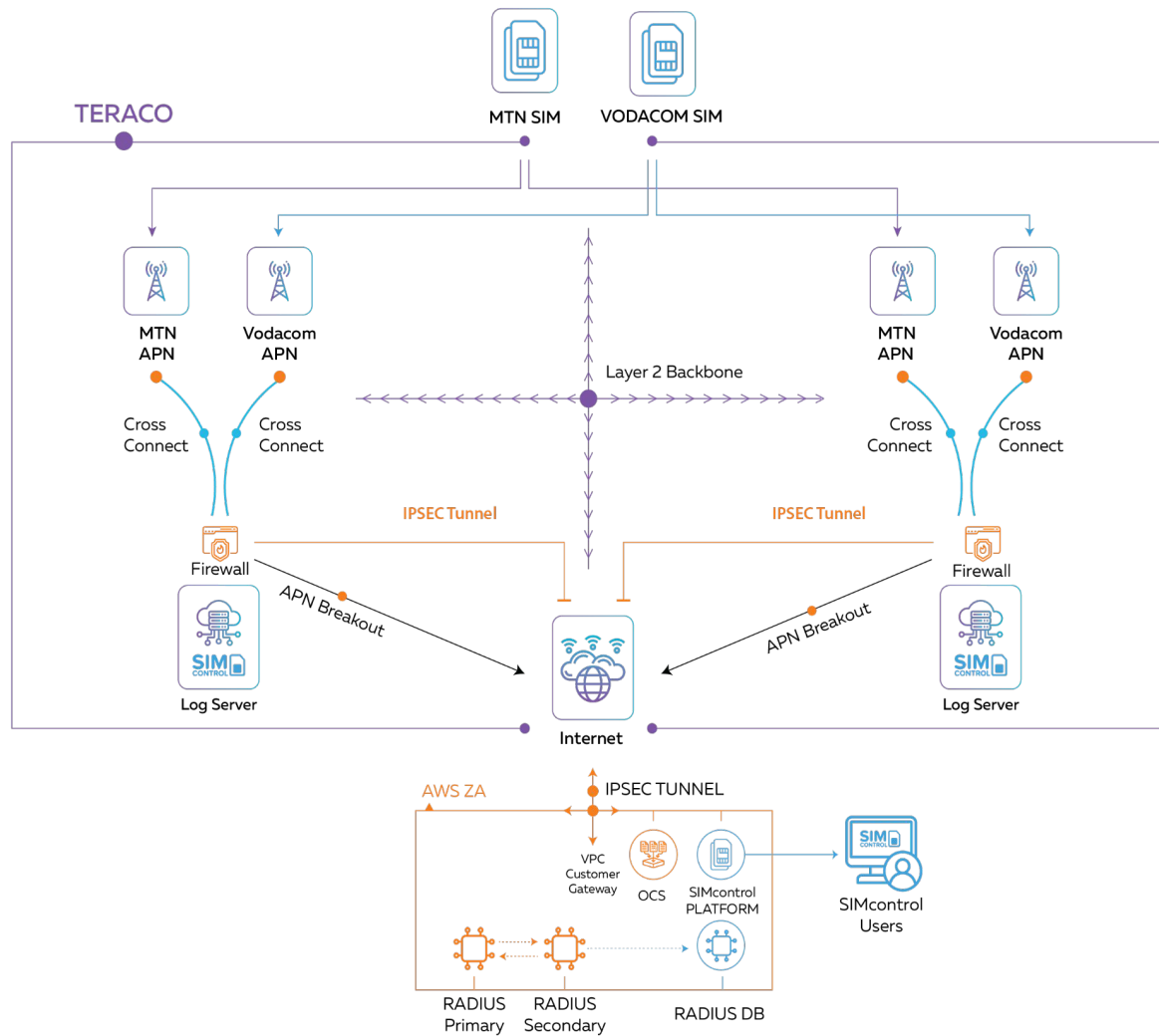
More information on the SIMcontrol API can be found [here](#).

14. Security

- a.** Fixed or dynamic Radius IP management
- b.** Secure custom data routing options including IPsec / VPN / data center cross-over
- c.** Destination IP whitelisting (only allow data to reach specific IP's/url's)
- d.** Application filtering (i.e. social media)
- e.** IoT-ready endpoint security. End-to-end integrity of data passed along the network
- f.** Radius and firewall redundancy across different hosting locations
- g.** IMEI locking to hardware device

15. Network Diagram & Multi-premise Redundancy

Generic diagram. Exact network configuration will depend on individual custom setup.



16. Existing APN's

Existing Private APN's can easily be migrated to SIMcontrol to enable advanced quota, self-help and other functionality.

a. Vodacom: Existing Vodacom Private / Corporate APN's can be routed to SIMcontrol to be managed. This will enable radius (IP) & quota management as well as data consumption from the central data pool. There may be a fee charged by the network for this routing management.

b. MTN: There are some network restrictions on routing certain existing MTN Private APN's to the Managed APN. Please contact us for more information.

Please contact us for more information on APN migration options.

17. Account Funding & Billing

- a. SIMs can be suspended from SIMcontrol at any time, to not incur any further costs .
- b. SIM Management fees are billed to your account on the 1st of every month.
- c. Custom APN fees are billed to your account on the 1st of every month.
- d. Your SIMcontrol account needs to be sufficiently funded to allow for automated Pooled Data refills.
- e. You can set up an Account email alert to notify specific users when the account balance falls below a specified amount
- f. Should you require an accounting “buffer”, please contact our accounts team who can put this in place against a security deposit.
- g. Account payments can be made via EFT to any one of our bank accounts shown on the “Add Funds” section. Funds are allocated immediately as they are received by our banks. For urgent payments please use the “Clear Immediately” banking option.
- h. SIM contracts (if used) will be billed directly to your SIMcontrol account (if contracted through SIMcontrol) or directly to the customer (if contracted directly with the telco).

18. Basic Troubleshooting

- a. Has the SIM been SIM added to SIMcontrol? Does the SIM's network show as "Flickswitch APN" (Pooled Data) or "one APN" (SIM Data)?
- b. Has the SIM been successfully provisioned with the Telco? (Use the "APN Lookup" on the SIM profile screen to check Vodacom SIMs or ask our support team to check MTN SIMs).
- c. Pooled Data:
 - Has the SIM been given data quota? Is the quota balance showing on the SIM profile page?
 - Has the SIM been linked to a Quota Rule to monitor the quota allowance?
 - Does your Pooled Data bundle have enough data available for data reservation? (See 7.)
- d. SIM Data:
 - Does the SIM have a data balance available (look up live SIM balance)
- e. Has the device been updated with the APN name "flickswitch" or "one" and rebooted?

For further assistance or to log a support ticket please consult our [Help Desk](#)

Frequently Asked Questions

Can I use an existing SIMs?

Yes, the APN will work with existing SIMs as long as the as Telco can provision them on an APN.

(Vodacom - Prepaid, Business Flexi or Contract ; MTN - Business Flexi or Contract)

Speak to us about APN SIM options

Do Pooled Data bundles expire?

Yes. Pooled Data bundles expire after 30 days. Because you can change the bundle size at any time, and set up to auto-refill, you should always use all pooled data. If set up correctly there should be no data expiring.

Are there any out-of-bundle charges when using Pooled Data?

No. SIMs will always feed from a Pooled Data bundle. Because accounting intervals are up to 60 seconds from the networks, SIMs may consume small amounts of data before the session is terminated. These overages will be billed directly to your account.

Can I see session data?

Yes, the platform shows the current and historical data sessions up to 7 days. Data sessions may take up to 60 seconds to display. Note that devices using LTE can show open sessions of up to a few days due to the nature of LTE session reporting.

Can a session be stopped from the platform?

Yes, you can disconnect a session and force the SIM to stop working from the SIM profile page. (Network Lock).

How often is a SIM's balance monitored?

Pooled Data: Quota balances are updated every 60 seconds. Should a SIMs Quota Rule allow top-ups, it will automatically be topped up when it reaches the threshold set on the rule. Quota Rules can be changed at any time.

SIM Data: SIM data balances are update 3 x daily

Will VoIP data/protocols work on the Managed APN?

Yes, but the standard network setup may not be optimised for certain types of VoIP traffic.
Please test before deployment or discuss specifics in the technical solution meeting.

Are Static IPs assigned to each SIM?

Yes, if you choose the custom IP pool option. If you choose the standard setup SIM IP's will be dynamic, and may change. SIM IP's are private and not public IP's (i.e. not open to the internet).

Will the SIM get the same private IP each time it connects to the network?

Yes, if you choose the custom IP pool option.

Is it possible to connect to a device's IP?

Yes, if you choose the fixed IP setup you can remotely connect to the private IP address of the device through another SIM on the same IP range/subnet (and same network). Also enquire about a pre-configured VPN option between SIMcontrol and your own network.

Who allocates the IP subnets? SIMcontrol, or the telco?

IP's and subnets are managed by SIMcontrol. These are allocated during the APN provisioning/setup process.

What if I need to ensure that the subnet(s) assigned do not clash with any existing ones I have?

This needs to be highlighted on the technical Solution Document that will be completed.

Is it possible to expand the initial subnet later?

Yes. You will be allocated a specific range at first based on the agreed Solution Document. Additional ranges can be added on request.

Who manages firewall policies? The telco, SIMcontrol or customer?

Firewalling is managed by SIMcontrol. Should you wish to handle this yourself, data can be passed through (without any firewall policies) to a specific endpoint or corporate network.

Can IPsec (VPN) connections be set up to specific endpoints?

Yes, multiple VPN's can be set up (should redundancy be needed). There is a monthly fee per endpoint managed.

How long can a SIM stay in storage after being tested?

This depends on the rules of the underlying SIM contract with the network. Contract and Business Flexi SIMs have no expiry while prepaid SIMs have specific [activity rules](#).

Can I set a cap for each SIM, as well as for the whole pool?

Pooled Data: Yes, quotas are set for each SIM, while you can also decide on the size of our pool. You can change the pool size or quotas as needed. There are no long-term data spend commitments.

SIM Data: Data bundle is managed on the SIM. If the data bundle runs out and is not automatically topped up by a recharge rule, the SIM will stop working.

I am concerned that a single unit could eat all the data available to the pool?

Because you set up quotas on SIM level, this is not possible.

Since Vodacom & MTN works off of single Data Pool, is there a particular advantage to selecting SIMs from Vodacom, or from MTN?

No, they are both solid and reputable business networks. Depending on your deployment, you may want to have the option to deploy SIMs from both networks over time (i.e. should you have coverage issues at a particular location).
The one advantage of selecting Vodacom is the Business Flexi SIM option.

What happens when the Pooled Data is used up? Can we provision more at short notice?

Yes, your data pool can be refilled automatically (via a refill rule), or you can instantly buy another data pool manually on the platform.

Is it possible to use existing SIMs in the field, or do we need to purchase new ones?

Existing SIMs can be used. As long as the device APN can be updated, the SIM can be managed on the Managed APN.
On MTN, only specific business contract SIMs can be managed on the APN.
Existing Private APN's can also be migrated to SIMcontrol in their entirety, without having to update device APN settings (i.e. keep existing APN name)

Technical Support



Log a ticket with our [Help Desk](#)

Or call: +27 (0)87 943 7222