

VTAP

VTAP Agent User Guide

VTAP Agent

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If you need help to set up or use the VTAP Agent, beyond what is contained in this User Guide, then please contact our support team.

Email: vtap-support@dotorigin.com

Download the latest documentation and firmware from <https://vtapnfc.com>

Telephone UK and Europe: +44 (0) 1428 685861

Telephone North America and Latin America: +1 (562) 262-9642

If you have any feedback on setting up or using the VTAP Agent or this documentation, then please contact our support team. The product is constantly being reviewed and improved and we value feedback about your experience.

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Dot Origin Ltd

Unit 7, Coopers Place Business Park, Combe Lane, Wormley

Godalming GU8 5SZ United Kingdom

+44 (0) 1428 685861

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1 Using this guide

This guide is for first-time users of the VTAP Agent application.

It will help you understand the functionality that this Windows application can add to a VTAP50-OEM, VTAP100-USB, VTAP100-OEM or VTAP100-PAC reader, connected to the same PC. (It can also be used with a VTAP100-PRO in Local mode in some cases, but please check with vtap-support@dotorigin.com that the reader is set up correctly in VTAP Cloud for this mode of operation.)

The guide describes how to set up each VTAP Agent option through the web browser user interface. It covers how to connect a basic VTAP reader to the VTAP Cloud service (subscription required) and how to share VTAP reader data with web applications.

There are many advanced uses of VTAP Agent, which rely on editing a configuration text file directly, such as managing several VTAP readers together. These advanced options are not discussed in this guide. If you need help beyond what is contained in the guide please contact vtap-support@dotorigin.com.

2 Introduction to VTAP readers and VTAP Agent

The VTAP100 is an NFC reader, certified compatible with Apple VAS and Google Wallet Smart Tap. It will extract and decrypt your NFC pass data from Apple or Google Wallet, and send this to the connected system, in your defined format.

The VTAP reader can be used with loyalty and rewards programmes, memberships, turnstile systems, and electronic ticketing. It is supplied as a PCB with antenna, for integration by OEM customers, or enclosed in a desktop or wall-mounted case.



Figure 2-1 VTAP100-USB Reader

Designed to support smooth migration from plastic to mobile NFC passes, the VTAP will also read UIDs or block data from many RFID or NFC smartcards and tags including MIFARE Classic and DESFire.

Since the VTAP reader reads **passes** from mobile wallet applications, it remains separate from traditional (EMV) payment mechanisms, although it can be used to implement stored-value and other closed-loop payment solutions. This simplifies data and security considerations, and the human interaction.

Only VTAP PRO readers are IP-connected, alongside other advanced connectivity options. They are supplied ready for remote management and tap data processing using the VTAP Cloud service.

Any VTAP reader (except for a VTAP PRO reader already in Cloud mode) can be enhanced by VTAP Agent to work with the VTAP Cloud service and/or connect to web applications on a Windows PC.

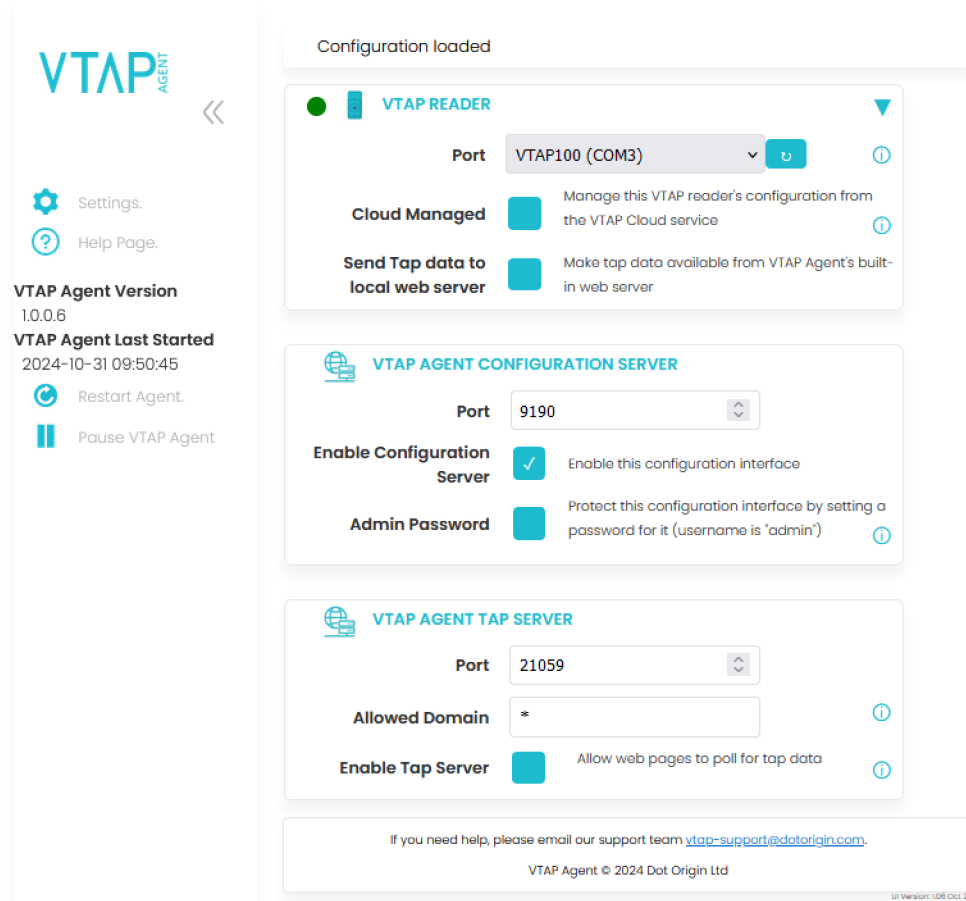


Figure 2–2 VTAP Agent software for Windows PC

The VTAP Agent software runs in the background as a Windows service and uses USB COM ports to communicate with VTAP readers. It has a simple web browser configuration interface.

From the VTAP Cloud online management platform (subscription required) you can manage your reader, setting configuration options, including Merchant IDs, Collector IDs and private keys.

And every time a pass is tapped, both pass data and the location of that tap could be sent via VTAP Cloud to your chosen endpoint, with buzzer or LED feedback triggered appropriately on the device. Alternatively, VTAP Agent can activate a built-in web server and provide tap data straight into your own web applications, running within a web browser on the user's computer.

2.1 Examples of VTAP Agent in use

Here are some potential uses of a VTAP reader connected by VTAP Agent. The first shows how the VTAP Cloud facilitates both control of your VTAP readers and a simple API interface to your own IT infrastructure:

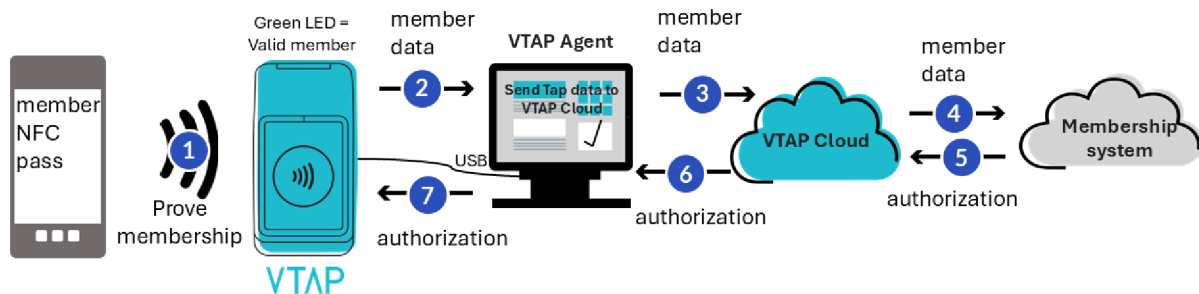


Figure 2-3 Example use of a VTAP reader with VTAP Agent and VTAP Cloud in proving membership

The VTAP Cloud configuration describes which mobile passes the VTAP reader should read, and a VTAP Cloud application can describe how to forward data from a pass read and any user feedback LEDs or beeps required. The management of readers is all done through the VTAP Cloud, which ensures updates can easily be distributed to a whole fleet of readers, regardless of their locations, as long as they are IP-connected.

And here is an example with a VTAP reader joined to a web application, running in a web browser on a Windows PC, which is another scenario with a VTAP reader delivering tap payloads into a web page running in the web browser on the computer where the VTAP reader is connected. The web page could be served from a remote web application server.

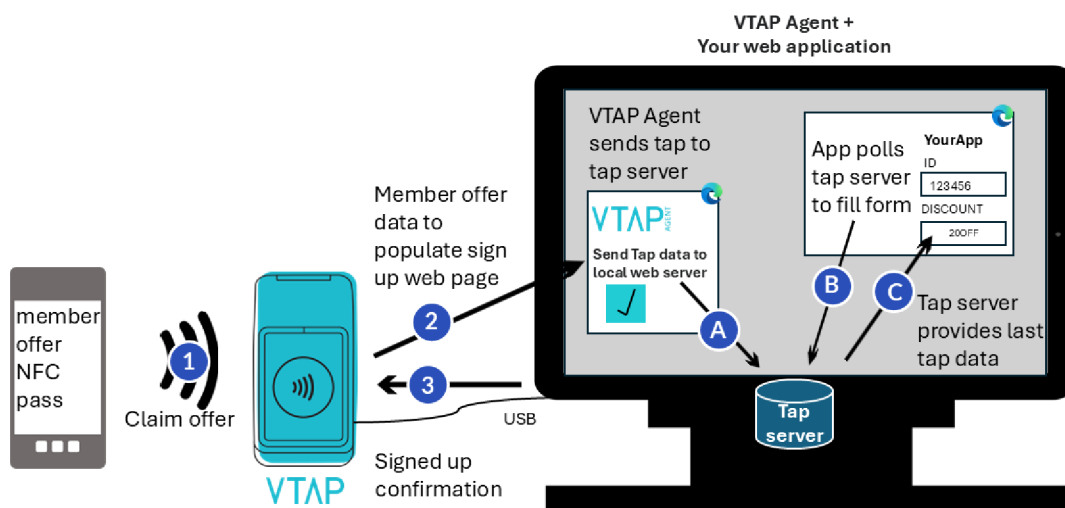


Figure 2-4 Example use of a VTAP reader with VTAP Agent for an offer sign up web application

3 First steps with VTAP Agent

3.1 Install VTAP Agent

Run the `VTAPAgent.msi` file on your Windows PC.

If a VTAP reader is connected to your PC when the VTAP Agent program is started you will see:

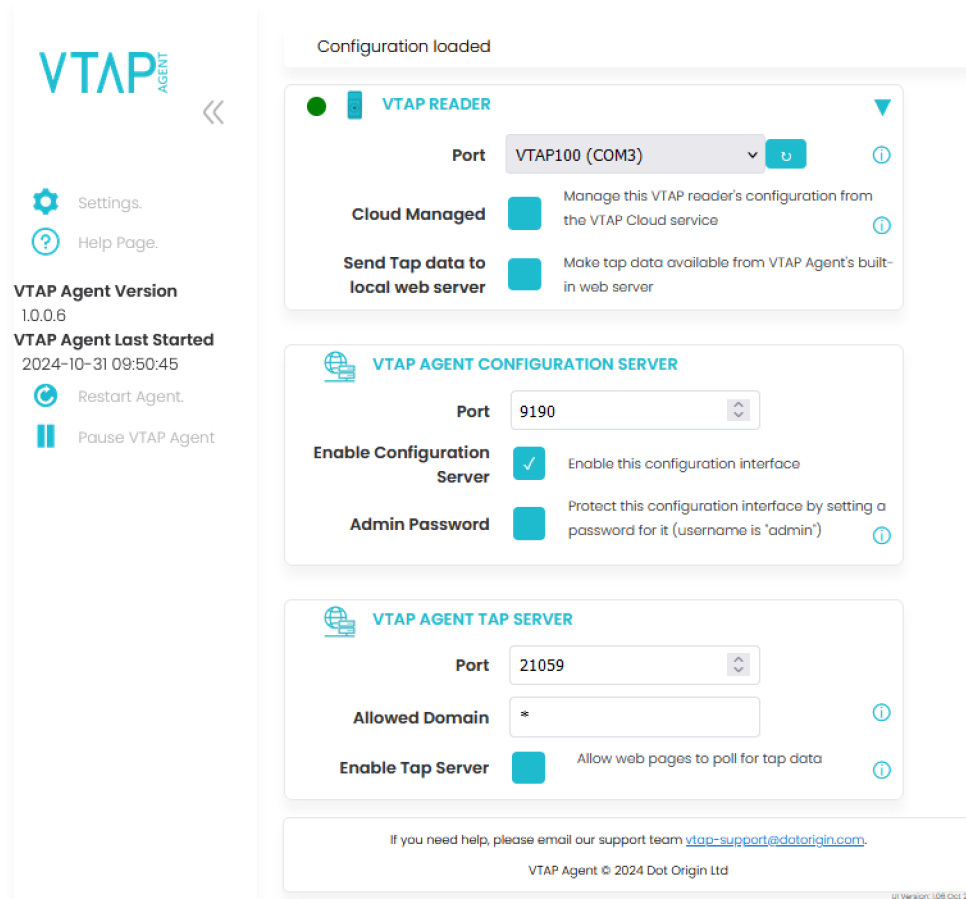



Figure 3-1 VTAP Agent home screen

3.2 VTAP Reader panel

The **VTAP Reader** parameters control how a VTAP reader connected to this PC will behave.

1. Refresh the **Port** parameter by using the refresh button  to detect connections available, and select a VTAP reader connected to the PC from the dropdown menu. (There may be a green spot next to the heading of the VTAP reader panel if a reader is detected, or a red spot if not.) If there is no VTAP reader currently connected, you can still choose the COM port that the reader will use when it is later connected.



Note: The VTAP reader requires a connection to the PC running VTAP Agent – ideally USB. If you are having problems, do check that the configuration for your VTAP reader (in the `config.txt` file) does not disable the VTAP USB COM port, which is otherwise enabled by default.

2. Choose whether you want the connected VTAP reader to be:

- **Cloud-managed.** If your VTAP reader is being managed through the VTAP Cloud service, you will also have the option to **Send Tap Data to VTAP Cloud** for processing actions defined there, as VTAP Cloud applications and web service integrations.

Note: Cloud management will overwrite any existing VTAP configuration, with settings saved in VTAP Cloud for this reader. If you may want to return to your initial configuration, copy the `config.txt` file on your reader to another location before saving the Cloud-managed option in VTAP Agent.

CAUTION: Do not select Cloud-managed mode for a VTAP100-PRO reader. If you intend to use VTAP Agent with a VTAP100-PRO reader, please check with vtap-support@dotorigin.com that the reader is set up correctly in VTAP Cloud for your intended mode of operation.

- **Send Tap to a local web server.** If this is chosen, you set a period in ms for tap payloads to remain available. 1 second is the default. You are looking to retain payload information for the minimum amount of time, to ensure that only recent tap data can be received by your web application. This can prevent the web application reading leftover tap data when it starts up. The period has to be long enough for your application to work reliably, which depends on the frequency of polling for tap data by the asynchronous JavaScript in the web page.
3. Finish by selecting the Save button  to confirm your choices. (Some choices may prompt you, in the left hand panel, to select the Restart Agent button  before they can take effect.) If you now have a Cloud-managed VTAP reader, refer to the **VTAP Cloud-managed reader** section for more about how it will behave. If you have chosen to deliver tap payloads to a web page, refer to the **Web server for tap data** section for more about how that works. (Your VTAP reader with VTAP Agent can do both: it can be Cloud-managed and deliver tap payloads to a web page running in a web browser on the same computer.)
4. Check the status of the connected reader at any time by selecting the ▼ button in the VTAP reader panel. This will display additional information about that VTAP reader, which is updated every 10 seconds:

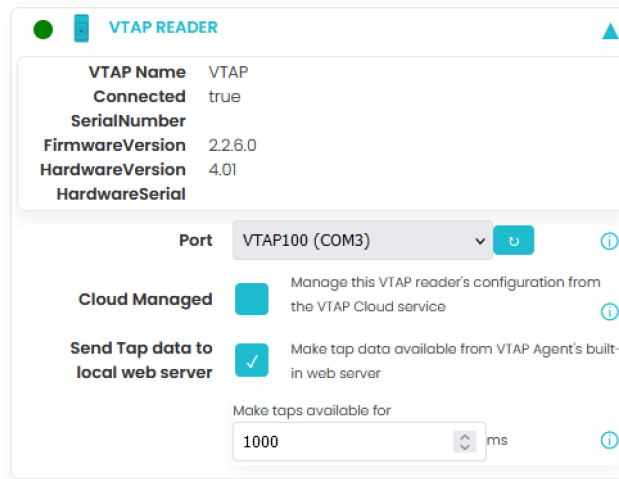


Figure 3-2 Additional VTAP reader status information


5. If you want to suspend the VTAP Agent application, select the Pause VTAP Agent button **II** on the left hand side at any time. Pause will pause VTAP Agent control of the VTAP reader operation and release its COM port.

3.3 VTAP Agent Configuration Server panel

The **VTAP Agent Configuration Server** parameters can be used to change how the VTAP Agent User Interface runs, if needed.

- By default the VTAP Agent configuration server will use **Port** 9190, as this is not used by common office applications, but it can be changed to your preferred port if there is a clash with your PC setup.
- By default the User Interface, which is a built-in web server, is enabled. It can be disabled here, by unchecking **Enable Configuration Server**, if you want to make more advanced changes through the configuration text file. Please contact vtap-support@dotorigin.com for help, if you need this option.
- The User Interface can be password protected, if you choose to set an **Admin password** here. After doing that, you will have to log in with username 'admin' and the password that you set, to make any changes through the VTAP Agent user interface. (This is intended to prevent accidental changes rather than prevent all changes, as the password requirement can still be overridden using the configuration text file. If your Windows configuration is also set to ensure that only administrators can edit the configuration file directly, then this option will prevent ordinary users from making changes to VTAP Agent operation.)

3.4 Settings panel

If you choose **Settings**  from the left hand side you can toggle another panel into view, showing VTAP Agent settings:

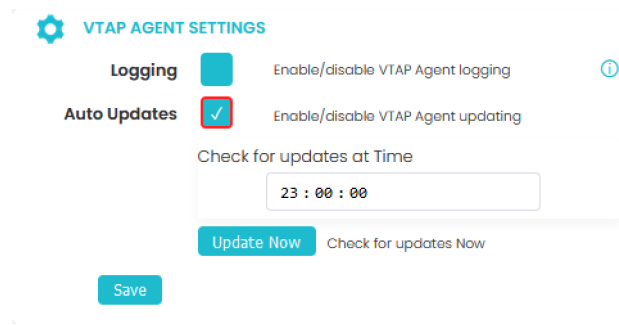


Figure 3-3 VTAP Agent Settings extra panel

The **VTAP Agent Settings** simply control whether the VTAP Agent application is allowed to routinely check for updates and update automatically (at a time you set, respecting your PC time zone settings). There is an Update Now button, to check for updates immediately.

There is also a VTAP Agent logging function, which you might be asked to enable by VTAP support staff, if they are helping you troubleshoot an issue with your application.

3.5 Other controls

There are a few other buttons at the left hand side of the screen. These allow you to **||** Pause then **⏪** Resume, or **🔄** Restart VTAP Agent control of your VTAP reader configuration. Pause will pause VTAP Agent control of the VTAP reader operation and release its COM port. A restart may be required after making significant configuration changes. You can also access the Help Pages.

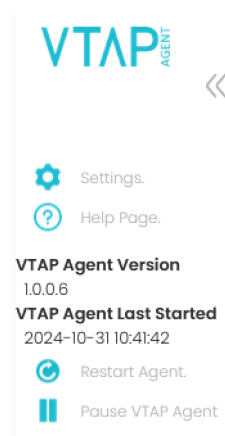


Figure 3-4 VTAP Agent left hand panel

If this panel is reduced in width to show only the buttons, use the arrows **>>** to see more.

4 Cloud-managed reader

This section describes how using your VTAP reader will change, when it is has been switched into Cloud-managed mode by the VTAP Agent.

4.1 VTAP Reader LEDs

The first change you will notice when you start Cloud management of your VTAP reader will be a steady red LED on the top of the VTAP reader. This indicates that the device is booting up, which can take up to 10 seconds.

When boot up is complete you should see the LED flash red while the device establishes a network connection. A steady blue LED indicates you have a successful connection to the network and the Internet, and therefore to the Dot Origin cloud platform.

Note: The steady blue LED will flicker every 30s in response to a heartbeat signal, giving visual confirmation it is still in communication with the VTAP Cloud.

Continued LED red flashing signals a problem. In this case please contact vtap-support@dotorigin.com to help with troubleshooting.



4.2 Using the VTAP Cloud platform

If you do not already have a VTAP Cloud subscription for this VTAP reader, and need access to the VTAP Cloud Admin Platform, you should contact vtap-support@dotorigin.com with your VTAP reader serial number, to register for access to the VTAP Cloud service.

Note: If your VTAP reader does not have a serial number in firmware which matches the sticker on the case, this can be corrected by contacting vtap-support@dotorigin.com. Check the `BOOT.TXT` file, where the serial number is listed as 'VTAP label' if present.

In Cloud mode, the VTAP reader can connect to the VTAP Cloud Platform <https://vtap.dotorigin.cloud>. If you also selected **Send Tap Data to VTAP Cloud** then you can choose applications on the VTAP Cloud platform to return appropriate actions for the VTAP to perform, in response to a successful pass tap.

If you have powered your VTAP reader, and it has successfully connected to VTAP Cloud, the reader itself will show a steady blue LED. You should also find it listed on the Readers page of the VTAP Cloud platform, with a green status dot alongside, meaning it has connected to the VTAP Cloud within the last hour. (Refer to the VTAP Cloud User Guide to learn more about connecting your VTAP readers.)

If you select the blue button  next to the reader you are interested in, you can view details about its settings, while on the Readers page of the VTAP Cloud platform, such as reader health and information about the most recent reader activity. The  button will allow edits.

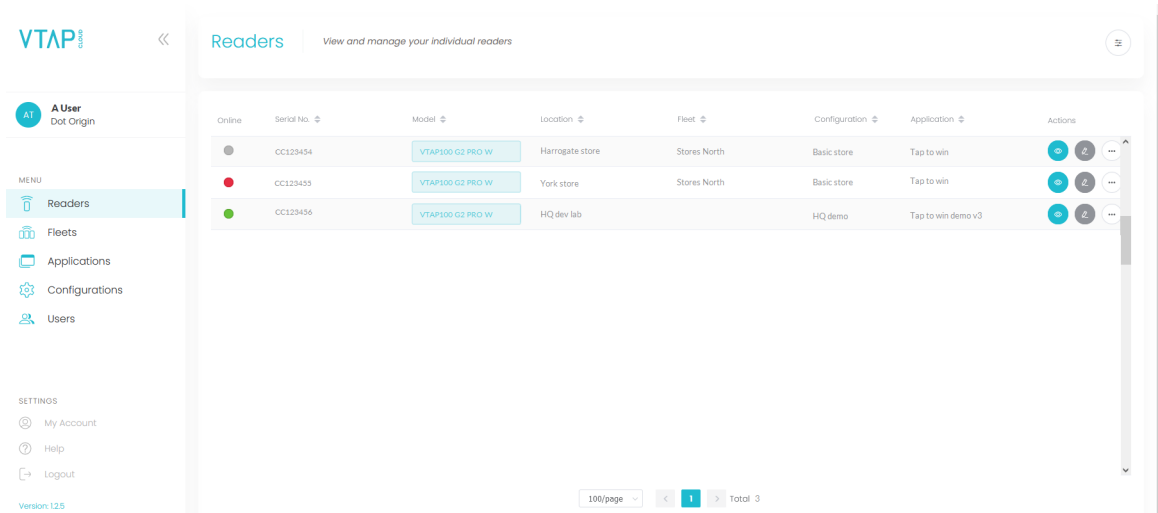


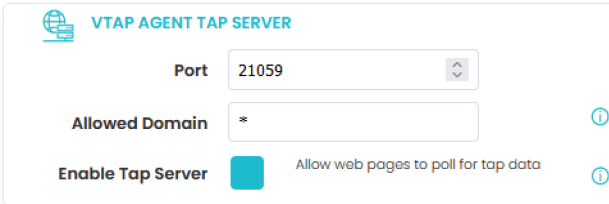
Figure 4-1 Example Readers page on the VTAP Cloud platform

5 Web server for tap data

This section describes how VTAP Agent can make tap data from your VTAP reader available to a remote web page. VTAP Agent will run its own web server for tap data, so that a web page served by a remote web application, such as your web application's enrolment or login form, can access tap payloads using JavaScript.

5.1 Tap server settings

After choosing **Send Tap data to local web server** in the VTAP Reader panel and choosing the Save button , you can check the settings in the VTAP Agent Tap Server panel:




The screenshot shows the 'VTAP AGENT TAP SERVER' configuration panel. It includes a 'Port' dropdown menu set to '21059', an 'Allowed Domain' text input field containing an asterisk (*), and an 'Enable Tap Server' checkbox that is checked. Below the checkbox is the text 'Allow web pages to poll for tap data'. Information icons (i) are present next to the 'Allowed Domain' and 'Enable Tap Server' fields.

Figure 5-1 VTAP Agent with a tap server running

The **VTAP Agent Tap Server** parameters change how the VTAP Agent Tap Server runs:

- By default the VTAP Agent tap server will use **Port 21059**, as this is not used by common office applications, but it can be changed to your preferred port if there is a clash with your PC set up. (It is the same Port used by the Dot Origin Read-a-Card application for this purpose.)
- By default, web pages from any domain are allowed to access the tap data. We recommend that you restrict access to a single domain by entering an **Allowed Domain** name, such as `dotorigin.com` instead of `*`.
- You can choose to enable or disable the tap server in this panel, using the **Enable Tap Server** check box, if you want to temporarily suspend access to the data without losing other settings. This allows you to test your web page's handling of this scenario.

Choose the Save button  in this panel when you are ready to confirm your choices and change your configuration.

5.2 JavaScript code example

You can open a **VTAP Agent tap server demonstration HTML file**, saved during installation, usually under **C:\Program Files (x86)\VTAP Agent\tap.htm** and experience how tap payloads can be received and incorporated into a web application.

This file contains JavaScript code that will detect a connected reader, open an asynchronous connection with the web server, and poll for tap data to populate a simple form.

Use this code as a starting point for adjusting your own web application to make use of tap payload data from the VTAP reader.

6 Next steps

If you decide not to use VTAP Agent any more, you can return a VTAP reader to its factory default stand alone operation, separate from VTAP Agent. This is done by:

- pausing VTAP Agent in the left hand panel,
- stopping the VTAP Agent service, or
- uninstalling VTAP Agent.

When a VTAP reader has been managed by VTAP Cloud its configuration may have changed, but as soon as VTAP Agent is no longer connecting that VTAP Reader to VTAP Cloud, the `config.txt` configuration file can again be edited manually, as required.

There are many advanced uses of VTAP Agent, which rely on editing a configuration text file directly, such as managing several VTAP readers together. These advanced options are not discussed in this guide. If you need help beyond what is contained in the guide please contact vtap-support@dotorigin.com.