entity
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CONNECTING TO THE ENTITY KADOE SERVICE USING SFTP

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Content

Audience

This document contains the technical information to help you connect to the Entity KADOE service. You should be reading this document if you are planning to implement a connection to the service.

Glossary

API	**Application Programming Interface. The KADOE service has a HTPPS end-point which client applications can use to interact with the service**
Control Reference	**A sequential number applied enquiry and response batches**
Date of Event	**The date of the event; an accident or a parking violation for example, for which vehicle keeper's details are requested. There are limits to how long ago the event can be. The limit is part of the contract with the DVLA**
Debit Statement	**A legacy reporting message that reports on the counts of enquiries we have received and responses we have returned.**
DVLA	**The Driver and Vehicle Licensing Agency. The organisation of the UK government responsible for maintaining a database of drivers in Great Britain and a database of vehicles for the entire United Kingdom**
EDI	**Electronic Data Interchange. A method of sending business data between parties. The KADOE service has connectivity for EDI**
Enquirer Id	**The ID given to customers registered with the DVLA. Until the DVLA has issued an Enquirer Id to a customer, we cannot accept production messages.**
Enquiry	**A message containing the VRM and Date of Event and reason code for which vehicle keeper details are required.**
Enquiry Reference	**A customer's reference to the Enquiry. This should be unique**
Party name	**The name of the customer**
Reason Code (Enquiry Reason Code)	**A code for the reason why an Enquiry is being made. Customers are given the codes by the DVLA. Customers can only make enquiries with the codes the DVLA has issued to them.**
Response	**The vehicle keeper details associated with an enquiry.**
SFTP	**A method of securely transferring files. Not to be confused with FTP or FTPS which are entirely different methods of transferring files. The KADOE service has connectivity for SFTP but not FTP or FTPS**
SSH	**Secure Shell. An encrypted link over a network. The underlying protocol of SFTP**
Vehicle Keeper	**The person registered with the DVLA as the keeper of a vehicle.**
VRM	**Vehicle Registration Mark**

Introduction

The Entity KADOE service provides secure and flexible connectivity for companies wishing to use the DVLA's vehicle keeper lookup service. Using the KADOE service removes the need for the specialised network infrastructure demanded by the DVLA and provides email and telephone support for users of our service.

The Entity KADOE service is secure and complies fully with the DVLA's strict data protection policies. Connections between companies and the Entity KADOE service are secure connections.

Companies that use the Entity KADOE service do so once they have signed a contract with the DVLA. The Entity KADOE service does not take away any of the responsibilities those companies have for the security and proper handling of the data that the DVLA provides via the Entity KADOE service. If you are in any doubt about how your data should be secured, or if you would like help in preparing a security audit in the context of our service, then please get in touch (servicedesk@entitygroup.com).

There are 4 ways to connect to the service:

1. **By a desktop client that runs on the Windows operating system**
2. **By an Electronic Data Interchange (EDI) connection through your EDI network provider**
3. **By SFTP file transfers over a secured (SSH) file transfer connection.**
4. **By HTTPS secured API connection used by your back-office system.**

There are several things you need to consider before choosing which method is best for you. We are happy to discuss these in detail with you.

This document deals with connections to the KADOE service using the SFTP gateway.

Prerequisites for using the KADOE Service

The Entity KADOE service is a value-added messaging service between yourselves and the DVLA. You are responsible for the data that you send us and the data you receive from us. Your company must be authorised by the DVLA to use their vehicle keeper look-up service before it can use the KADOE service. Your company must be registered with our service and have a contract with us before you can connect to the service.

These prerequisites are enforced because the service deals with personal (to the vehicle keeper) data. You must be aware of this and accommodate it in your data security policies.

We are assuming that the readers of this document will know that they are (or are soon to be) registered with both the DVLA and ourselves.

The data security policy for the KADOE service is available from us.

Technical Prerequisite

The SFTP gateway is restricted by IP address as well as user-name and password/SSH key file. If you are planning to use the SFTP gateway, you must have a static IP address that we can add to the white-list on the gateway. This applies to test and production environments.

KADOE Service SFTP Basics

The KADOE service SFTP gateway is a SHELL FILE TRANSFER gateway. It is NOT a secure variation of the more common FTP protocol. To connect to the KADOE SFTP gateway, you will need a SFTP client.

If you are planning to transfer files manually, you should get a client that has a graphical interface such as FileZilla or WinSCP. If you have software that is going to make the connection, you will need a SFTP library.

Registering for the SFTP Gateway

If you are either an existing customer moving over to the SFTP gateway, or a new customer wanting to use it, you must register with us to do so. Registration is needed because we configure you as a user on the gateway and add your static IP address to the gateway's firewall. You must register with the gateway before you can exchange test or production files.

To register, please contact the service desk: servicedesk@entitygroup.com. We will need your static IP address and, if you plan to authenticate with an SSH key, your public key file (see Appendix). We will allocate you a user name and, if you are not using a SSH key, a password.

Connecting to the SFTP Gateway

To connect with the gateway once you have been registered use

Host Production: kadoe.co.uk
Port: 22

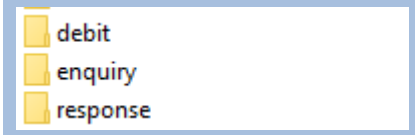
Host Test: kadoe.biz
Port: 22

Logging on to the SFTP Gateway

When you register to use the SFTP gateway, we will configure you as a user of the gateway. You will have standard permissions within your home directory (read/write/create/delete) for files and folders. To log on to the SFTP gateway, you can either use a username/password combination, or a user name/key file. Which one you choose will depend on your own security policy and the capabilities of the client you are using.

SFTP Gateway Directories

When your SFTP client logs onto the SFTP server, it lands in the home folder for your account. This has three sub folders into which you PUT or GET files.

Folder structure	Comments
	**debit folder: where debit statements are picked up from** **enquiry folder: where you drop enquiry files** **response folder: where response files are picked up from**

The SFTP client drops vehicle keeper enquiry files into the /enquiry folder and picks up vehicle keeper responses from the /response folder. SFTP clients cannot stray away from this structure but they do have the permission to create sub-folders.

Testing File Transfers

Integration testing with kadoe.biz

We have a second server which you can use for integration testing. This server uses a different domain name and is permanently configured as a test environment. Apart from the different domain name, the folder structures are the same as for the kadoe.co.uk domain.

Sending files as part of integration testing

We have a separate document which provides details of how you can do integration testing with our service.

The Files that are Exchanged

The gateway exchanges ASCII comma separated value files. The enquiry files that are sent to the gateway by your client, can have Windows or Unix line endings; carriage-return-line-feed or line-feed. Files returned by the gateway have Windows line endings by default. If you need your files to have Unix line endings (just line-feed), let us know when you register with our service and we will configure the gateway to do that.

File names

Enquiry file names must be in the form of VQ3YYYYMMDDHHMMSS.csv. For example: VQ320180720201205.csv.

The gateway uses VQ7YYYYMMDDHHMMSS.csv as the format for response file names. For example: VQ720180718151546.csv

File formats

The next section specifies the default file formats used by the gateway. If for some reason your back-office systems cannot produce or consume these files, please get in touch (servicedesk@entitygroup.com). Scripting alternative file formats can be a straight forward task.

PUT file on the Gateway, GET files from it

You can PUT enquiry files into the enquiry directory at any time. The gateway regularly polls the directory for new files and moves them out to be processed. You should not delete an enquiry file once you have dropped it into the folder.

The gateway puts response files into the response folder early in the morning after they have been received from the DVLA. When you are using the test environment folders, responses are put into the gateway between 5 and minutes after you put the enquiries in the gateway. In production, responses may be delayed because of business or technical problems. Our service desk will let you know when this happens.

The gateway moves enquiry files from the enquiry directory into its own processing area. The gateway does not do any house-keeping of the response directory. It is the client's responsibility to house-keep

the response directory. The client can either delete successfully downloaded files or remember them, so it doesn't download them more than once.

KADOE Service SFTP File Formats

Enquiry file format

ASCII text values separated by a comma.
Quotation marks around the field data is optional. Quotation marks are those found in a text editor and not the quotation marks you find in word processors.

Column headings are optional.

	Field	Field Name		Format	Purpose
1	VRM	VRM	M	1 to 7 alpha-numeric characters	Vehicle Registration Mark
2	Date Of Event	DOE	M	YYYYMMDD	Date of the event. Who owned the vehicle on this date.
3	Enquiry Reference	ENQUIRYREF	M	1 to 20 characters 0-9, A-Z, /, * and ;	Your reference to this vehicle keeper enquiry.
4	Enquirer Id	ENQUIRERID	M	AANNN	Your EnquirerId
5	Enquiry Reason Code	REASONCODE	M	NNAA	The reason code for the vehicle keeper enquiry

Example

“VRM”,”DOE”,”ENQUIRYREF”,”ENQUIRERID”,”REASONCODE”
"KM03ABC","20171202","A000222B","AA000","00AA"
"LM07ABC","20171202","B000222B","AA000","00CD"
LM08ABC,20171202,B000222B,AA000,00CD

Response file format

The file is ASCII text values separated by a comma. Quotation marks are only applied to fields which contain commas.
All the data is optional. Missing data within a line will be blank and lines finish at the last piece of data.

The file has column headings.

	Field	Field Name	Format	Purpose
1	VRM	VRM	A (7)	Vehicle Registration Mark
2	Date Of Event	DOE	YYYYMMDD	Date of the event. Who owned the vehicle on this date.
3	Enquiry Reference	ENQUIRYREF	A (20)	Your reference.
4	Enquirer Id	ENQUIRERID	A (5)	Your Enquirer Id
5	Enquiry Reason Code	REASONCODE	A (4)	The reason code for the vehicle keeper enquiry
6	Hard Copy	HARDCOPY	N	1 if the DVLA is going to provide a hardcopy of the response, blank otherwise
7	Date Of Response	DATERESPONSE	YYYYMMDD	

8	Response Error	ERR		Possible error code. Blank if no error. See the appendix for a list of error codes
9	Make	VMAKE	A (35)	Vehicle make
10	Model	VMODEL	A (35)	Vehicle model
11	Colour	VCOLOUR	A (20)	Vehicle colour
12	Engine Capacity	ENGINECAP	A (35)	
13	Seating Capacity	SEATCAP	N	
14	Taxation Category	TAXCAT	A (25)	
15	VIN	VIN	A (35)	
16	Number of previous keepers	NUMPKEEPER	N	
17	Date of last keeper change	DATELKCHANGE	YYYYMMDD	
18	Date of Licence expiry	DATELICEXP	YYYYMMDD	
19	Date of Theft	DATETHEFT	YYYYMMDD	
20	Date of recovery	DATERECOVERY	YYYYMMDD	
21	Date of scrapping	DATESCRAP	YYYYMMDD	
22	Date of first registration	DATEFSTREG	YYYYMMDD	
23	Keeper Title	KTITLE	A (10)	
24	Keeper First Name	KFNAME	A (35)	
25	Keeper Surname	KSNAME	A (35)	
26	Keeper Company Name	KCNAME	A (70)	
27	Keeper Other Name	KONAME	A (70)	
28	Keeper Address 1	KADDRS1	A (35)	
29	Keeper Address 2	KADDRS2	A (35)	
30	Keeper Address 3	KADDRS3	A (35)	
31	Keeper Address 4	KADDRS4	A (35)	
32	Keeper Town	KTOWN	A (35)	
33	Keeper Post Code	KPOSTCODE	A (8)	

Formats

YYYYMMDD	Date formatted by year, month and day: eg 20180305
A (30)	Character data maximum 30 characters in length
N	Numeric data

Example

The line is too long for an example, please see the example file in the connection pack.

Appendix

Errors sent in response messages that are ERR response types

Code	Description
KS001	Unable to parse request
KS002	Failed schema validation
KS010	Expected element not found
KS011	Expected value not found
KS012	Invalid value
KS013	Unsupported message type
KS014	Message version is not supported
KS015	Test flag is not allowed on this message
KS016	Only one instance of the element expected
KS050	Authorisation failed
KS052	Control Reference has been acknowledged
KS054	Party account is disabled
KS055	Invalid Password

Vehicle keeper enquiry response errors (WARN response type).

Code	Description
KS010	Expected element not found
KS011	Expected value not found
KS012	Invalid value
KS500	Invalid VRM (from KADOE service validation)
KS501	Invalid EnquirerId
KS502	Invalid EnquiryCode
KS503	Invalid IntermediaryId
KS504	Invalid date of event (from KADOE service validation)
KS505	Invalid date of enquiry (from KADOE service validation)
KS506	Invalid Enquiry Reference
E2209	Enquiry is outside of permitted validity period (from DVLA validation)
E2200	No trace of the vehicle
E2201	Scrapped marker set – vehicle details provided
E2202	Exported marker set – vehicle details provided
E2203	Void main file record
E2204	MOD Record
E2205	BFG Record
E2206	Invalid VRM (from DVLA validation)
E2207	Invalid date of event (from DVLA validation)
E2208	Invalid date of enquiry (from DVLA validation)
E2209	Enquiry is outside of permitted validity period (from DVLA validation)

Using SSH Keys to authenticate with the gateway

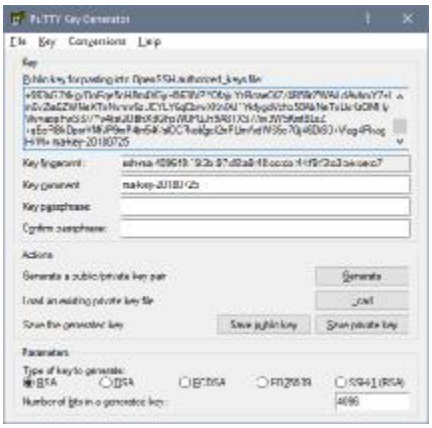
You can authenticate with the gateway using SSH keys instead of a password. To do so, you generate an OpenSSL public key and send it to us to install on the gateway. There are a few ways to generate OpenSSL keys depending on the tools you have and operating system that you use. As an example, we will use the Putty tool which is widely available (https://www.putty.org/)

If you haven't done so, download Putty from their website (https://www.putty.org/) and install it.

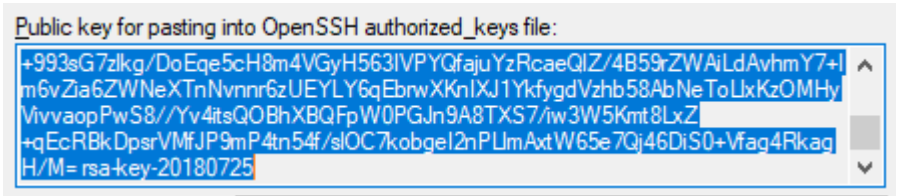
Using Putty Key Generator (puttygen.exe)

1 Start Putty Key Generator and ensure RSA key type and 4096 key bits are selected then click the Generate button.

2 Wiggle the mouse about in the blank part of the screen; as you do so, the progress bar will move along as the key is generated. When it is done, the screen will populate



3 Optionally, give your key a passphrase which will be used to protect your keys.
4 Save the public and private keys
5 Highlight and copy (ctl-c) the contents of the OpenSSL key



6 Paste the key into a new text file. This is a single line of text which must not be changed. Please make sure you select all the text: alt-p will do this.

7 Name the text file something identifiable; you could use your party identify or enquirer-id for example, to create a name like aa123-sftp-public.key. Please do not put spaces in your file name.

You will send your Open-SSL public key to us and we will install it onto the gateway. You will then be able to use your username and private key file (on your client) to authenticate with the gateway.

Why would you use a keyfile rather than a password?

A lot of people find it better to use keyfiles because they do not have to store passwords, and many companies' security policies insist keyfiles are used.