



TsmWeb-STS User Guide

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Synopsis:	This document provides the guidance on commissioning the STS vending solutions provided by Prism (TSM250)

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1 Audience

TsmWeb-STS users that are running Windows 7/8/10 as their PC operating system.

2 Getting Started Using a TSM250 Security Module

2.1 Driver Installation

The STS vending application operates by interacting with a TSM250 security module. The TSM250 has a USB interface that presents itself as a COM port. The driver may be found on the Support CD.

Procedure:

- On the TsmWeb-STS CD navigate to: Drivers\Driver250
- Follow the instructions in the readme.txt file.

2.2 Vending Software Installation

After the USB-Serial device driver for the TSM250 has been installed the application software needs to be installed. The installation executable, named TsmWeb-STS-x.xx-Setup.exe (where x.xx is the version you have been supplied with), is located on the TsmWeb-STS CD in the TsmWeb-STS folder. After successfully running the installer, the application will be installed and runs as a Windows service.



3 Setup

3.1 Launch the TsmWeb-STS Web UI

The STS vending applications User Interface is provided by a web server running on the local PC and is accessed via a web browser. To access the web interface, a shortcut link has been provided on the Start menu:

Navigate from the Start menu to All Programs\Prism\TsmWeb-STS and click on the “TsmWeb” link. Click this shortcut to open your default web browser with the correct address (<http://127.0.0.1>) for accessing the web service’s user interface.



Internet Explorer version 6 is **not** supported, all current versions of the popular web browsers are supported, Firefox and Google Chrome are the preferred browsers for **TsmWeb-STS**

The application will not work if the **Prism TsmWeb** service is not started. Refer to [Starting the service](#) (Section 6.1).

Refer to section 2.7.3 in the **TSM500 and TSMWEB User Guide** (Document Number PR-D2-0854) about an SSL/TLS certification issue that might be experienced.

Remember to first login as Local to set different Users and their passwords. After completing the user set up, remember to disable the permissions for the Local user, failing to do so will result in anyone accessing the system.

3.2 Configure TsmWeb-STS using the Quick Setup Wizard

The setup process can be simplified by stepping through the STS Vending Quick Setup wizard, which is an alternative to manual configuration as detailed in the section below.

To start the wizard, click on **STS Vending Quick Setup** in the menu on the left. Then click the **Start** button to proceed with the wizard. Follow the instructions displayed in each step, until completion of the wizard.

3.3 Configure TsmWeb-STS for first use

3.3.1 Select the TSM

- Make sure the TSM is plugged in.
- From the **TsmWeb-STS** home page, navigate to the **System Management** page by clicking on **System** in the menu on the left.
- Click on **Select TSM** to bring up a list of available TSMs and select the Vending TSM from the list.
- Click on **Change TSM** to change the module that TsmWeb-STS interacts with.
- If TSM module cannot be found, unplug and re-plug the USB cable to TSM module.

3.3.2 Setting Preferences

The preference manager allows the fine tuning of various settings for TsmWeb-STS. To open the preference manager, click on **Preference Manager** in the menu on the left. A table of preferences will be displayed, along with the current value of each. To change a preference, click on the **Edit** link in the row of the preference. Not all preferences are allowed to be changed however; some are only shown for informative purposes. Preferences that can’t be changed will not have an **Edit** link.



The preferences relating specifically to STS vending are:

- **sts.alert.lowVendsWatermark:** When the number of vends remaining drops below this value, an alert will appear.
- **sts.currencySymbol:** The currency symbol to use for STS vending.
- **sts.transactionFee.prism:** The transaction fee for Prism for each vend.
- **sts.transactionFee.vendor:** The transaction fee for the vendor for each vend.
- **sts.vendLimit.highValueMax:** The maximum currency amount (after fee deduction) that can be vended by users with the **stsVendingHigh** role. Refer to [How to Create New Users](#) (section 3.4).
- **sts.vendLimit.lowValueMax:** The maximum currency amount (after fee deduction) that can be vended by users with the **stsVendingLow** role. Refer to [How to Create New Users](#) (section 3.4).
- **sts.vendorDisplayName:** Vendor name that is printed on tokens. This requires a customize license to be loaded. Speak to Prism about generating a customize license for your HSM.
- **sts.tariff.roundingRule:** Selects the rounding mode that applies to tariff computations (section 3.3.7).

3.3.3 Enable Vending

The TSM needs to have a vending permission set before it can be used to do any vending. The setting is required for security reasons and is reset when the TSM loses power. Vending will need to be re-enabled whenever power is restored, for example whenever the TSM is plugged back into a PC.

To enable vending on a TSM250, do the following:

- From the TsmWeb-STIS home-page click on **STS VEND** under **STS** on the left.
- Click **Enable Vending**
- Enter in a module password and click **Enable Vending**. Note that by default the password is blank. The default password can be changed to a password of your choice by applying a password reset instruction for your HSM. Speak to Prism about generating this instruction for your HSM

3.3.4 Setting Tariffs

The information below needs to be captured in a tariff before a vend can be performed – the information is used for the vend. One or more tariffs may be added, but only the currently active tariff for a given SGC,TI,Subclass combination will be used.

- **Supply Group Code** is code of the relevant supply group (E.g. 008199)
- **Tariff Index** (E.g. 01, 02, 03 etc.) The tariff index the meter is using.
- **Sub class** (00 = electricity, 01 = water, 02 = gas, 03 = time)
- **Activation date** is the date from which the tariff is active/usable.
- **Tariff per unit** is the currency amount charged per kilowatt hour, up to 4 decimal places (e.g. \$1.50)

To add a tariff, follow the steps below:

- From the TsmWeb-STIS home-page click on **STS** in the menu on the left.
- Go to the section titled **Tariffs**
- Enter tariff data for the new tariff. (See the above descriptions for each field)
- Select **Submit Tariff Record**



- If the data was entered correctly, this new record will display in the table. Note: the table will only display the tariffs that are currently active as well as any future tariffs for a given SGC/TI/Subclass combination.

3.3.5 Uploading KLF

In order to vend tokens, the vending keys will need to be uploaded into the software database. The KLF (Key Load File) is supplied by the Eskom Key Management Centre, on request.

- From the TsmWeb-STS home-page click **STS**
- Go to the section **Upload a KLF**.
- Click **Choose File** and browse to where the KLF is saved.
- Ensure that the ID on the security module and the name of the KLF correspond (8 digits).
- Click **Upload**.

3.3.6 Transaction Counter (Remaining Vends)

Each time a token is generation is performed the number of remaining transactions/vends is decremented. If the module's transaction counter runs low, a warning will be displayed on screen as a reminder to purchase more transactions. The point, at which the software starts warning that the number of remaining transactions is low, can be set in the preference manager by modifying the `sts.alert.lowVendsWaterMark` preference. A transaction counter increase instruction can only be requested from Prism and in multiples of 10,000. Contact Prism to request the desired amount of transactions. After payment is made, an email will be sent from Prism with a file attachment containing an instruction for the TSM to increase the transaction counter. An example instruction looks like:

```
--VENDCREDIT BEGINS--
0335A8BED88D8839AC054A53758FA10F0155E8073576D19B33F47237BA01B392
D0DF951362D7D648C28806BDD026B387679DAEAB6FA5D733B692D58F65198CBB
...
116C6051194CFC447B366AE9E9EB7321A1AE0E3AF2069EB25034334A259F685
7CBE6B5501CB02020A6FBA62FE305320
--VENDCREDIT ENDS--
```

To apply the instruction, and thus increase the transaction counter by the requested amount:

- From the TsmWeb-STS home-page click **STS** on the left.
- In the box below **Apply Prism Instruction**, paste in the instruction that was received from Prism. Be sure to include both the **--VENDCREDIT BEGINS--** and **--VENDCREDIT ENDS--** lines, and everything in-between.
- Click **Update**.
- The transaction counter will be incremented by the requested amount.

3.3.7 Rounding modes

Tariff computations are subject to rounding. Consider for example if a consumer purchases ZAR 50.00 of Electricity at ZAR1.45/kWh: this should equal 34.483 kWh, but STS electricity unit tokens have a precision of



0.1 kWh, so the system must issue a token for 34.4 kWh or 34.5 kWh. The rounding mode (preference `sts.tariff.roundingRule` introduced in v5.15) determines the quantity of units to be issued.

We explain the rounding modes using a worked example of two successive sales of ZAR 50.00 at a tariff rate of ZAR1.47/kWh and a Channel Fee of ZAR 0.25:

Mode	roundUpNoCarry	roundUpCarryDebt	roundDownCarryChange
Description	Rounds resource units up, writes off the price difference as a discount. This is the default mode, and the only mode in versions older than v5.15.	Rounds resource units up, carries the price difference as a debt owed by the consumer that is recovered from the next sale.	Rounds resource units down, carries the price difference (change owed to consumer) and adds it into the next sale.
1 st sale	Payment 50.00 Channel fee -0.2500 Credit:Electricity 33.9 kWh @ 1.47000 -49.8330 Rounding (discount) 0.0830 LEAVES Balance out 0.0000	Payment 50.00 Channel fee -0.2500 Credit:Electricity 33.9 kWh @ 1.47000 -49.8330 LEAVES Balance out -0.0830	Payment 50.00 Channel fee -0.2500 Credit:Electricity 33.8 kWh @ 1.47000 -49.6860 LEAVES Balance out 0.0640
2 nd sale	Payment 50.00 Balance In 0.0000 Channel fee -0.2500 Credit:Electricity 33.9 kWh @ 1.47000 -49.8330 Rounding (discount) 0.0830 LEAVES Balance out 0.0000	Payment 50.00 Balance In -0.0830 Channel fee -0.2500 Credit:Electricity 33.8 kWh @ 1.47000 -49.6860 LEAVES Balance out -0.0190	Payment 50.00 Balance In 0.0640 Channel fee -0.2500 Credit:Electricity 33.8 kWh @ 1.47000 -49.6860 LEAVES Balance out 0.1280
Comments	<i>The “balance out” is always 0.</i>	<i>The “balance out” is zero or negative (owed by the consumer), and is recovered on the next sale.</i>	<i>The “balance out” is zero or positive (change owed to the consumer), and is added into the next sale.</i>
	<i>The “rounding (discount)” or “Balance out” is generally less than the tariff price of 1 unit, but it can exceed this for larger tokens (over 1638 kWh or 1638 kL), and may be up to 0.62% of the value of a currency token.</i>		

The precision of STS unit tokens is defined (by the STS standard¹) as follows:

Resource	STS subclass	Precision
Electricity	0	0.1 kWh (100Wh)
Water	1	0.1 kL (100L)
Gas	2	0.1 m ³

¹ IEC 62055-41:2018 (Ed3) section 6.3.6 Table 18

Resource	STS subclass	Precision
Time	3	0.1 minutes

3.4 How to Create New Users

Each TsmWeb-STs user account should uniquely identify one user. No account should be usable by more than one individual.

To create a new user account:

- From the TsmWeb-STs home-page click on **Users** on the left.
- Click on the **New User** link.
- Enter the new user's **logon name**, they will use this every time they log in to TsmWeb
- Choose which of the following **roles** are to be applied, see Appendix B for the list of roles and which permissions they have.



A user account with the **stsManagement** & **stsTechnical** roles needs to be created to complete Section 4.

- Fill in the details: Full name, Email, Description. These are for identifying the user.
- Account expires should be in the format CCYY-MM-DD, if this field is left blank then the default expiry is 1 year from the day the account is created. Once the user account expires the user will no longer be able to login to TSM-WEB.
- Let the new user enter their password and password confirmation.
- When all details have been entered, select **Submit**.



4 TsmWeb-STs Function

4.1 STs Administration

4.1.1 Create Tariffs

This section describes how to create a tariff.

- From the **TsmWeb-STs** home-page click **STs**, and then click on **STs Administration**.
- On the STs Administration page click the **Tariffs** tab, Tariffs page is displayed.
- Enter tariff information:
 - **Supply Group Code** = use to specify supply group code. a 6-digit number, e.g. 123456
 - **Tariff Index** = use to specify Tariff Index of the meter. e.g. 01.
 - **Subclass** = use to specify the type of token to generated e.g. Electricity, water, gas etc.
 - **Active Date** = use to specify the date the tariff will be active.
 - **Tariff per Unit** = use to set tariff cost per unit, the field takes up to 4 decimal places, e.g. 1.0000.
- Click the **Submit Tariff Record** to save the tariff details.

If the add tariff procedure was executed successfully, the application will redirect to the Tariff tabs and a success message will be displayed on a green message bar above the option tabs. If the display bar is red in colour an error would have occurred, please see Appendix A section 6.2 for further interpretation of the error.

4.1.2 Fees and Preferences

This procedure describes how to set Fees and Preferences.

- From the **TsmWeb-STs** home-page click **STs**, and then click on **STs Administration**.
- On the STs Administration page click the **Fees and Preferences** tab, Fees and Preferences page is displayed.
- Enter Fees and Preferences:
 - **Transaction Fee** = use to set transaction fee.
 - **Vendor Transaction Fee** = use to set the vendor transaction fee.
 - **Vend Threshold (High limit)** = use to set the max number of transactions assigned to users who have a high vend threshold e.g. high competent users.
 - **Vend Threshold (Low limit)** = use to set the max number of transactions assigned to users who have a low vend threshold e.g. new users.
 - **Transaction Counter Warning Threshold** = use to set the number of transaction to be reached before a low number of transactions warning appears.
- Click **SET** button to set Fees and Preferences.

If the set Fees and Preferences procedure was executed successfully, the application will redirect to the Tariff tabs and a success message will be displayed on a green message bar above the option tabs. If the display bar is red in colour an error would have occurred, please see Appendix A section 6.2 for further interpretation of the error.

4.1.3 Upload KLF

This procedure describes how to upload a KLF file.

- From the **TsmWeb-STs** home-page click **STs**, and then click on **STs Administration**.
- On the STs Administration Page click the **Upload KLF** tab, Upload KLF page is displayed.
- Click **Choose File** button and navigate to where your KLF file is located and select it.
- Click **Upload** button to upload KLF file.



4.1.4 Download KLF

This section describes how to download a KLF file.

- From the **TsmWeb-STs** home-page click **STS**, and then click on **STS Administration**.
- On the STS Administration Page click the **Download KLF** tab, Download KLF page is displayed.
- Click on the **Download KLF** button and the KLF is downloaded.

If the Download KLF procedure was executed successfully, the application will redirect to the Tariff tabs and a success message will be displayed on a green message bar above the option tabs. If the display bar is red in colour an error would have occurred, please see Appendix A section 6.2 for further interpretation of the error.

4.1.5 Bulk Meter Import

This section describes how to import meters in bulk.

4.1.5.1 Create File

Bulk meter import allows the import of multiple meters at once. Meter information is stored in a Comma Separated Values (CSV) file. Prior to bulk meter import, this CSV file will need to be created, which can be done using a text editor or in Microsoft Excel (save the spreadsheet as a .csv file). The first line of the file (which indicates the columns) should be:

Meta,MeterPAN,Organisation,Name,SGC,KRN,TI,EA,TCT,restype,isregistered,result

Where:

- Meta = Empty column
- MeterPAN = Should start with a hash "#", followed by the bulk meter PAN (11 or 18 digits)
- Organisation = Name of building/block of flats/housing estate where meter resides, e.g Kew Manors
- Name = name of meter owner/unit number e.g. John Smith, Unit 1
- SGC = Should start with a hash, followed by supply group code, a 6-digit number, e.g. 123456
- KRN = Key Revision Number, e.g. 1
- TI = Tariff Index, e.g. 01
- EA = Encryption Algorithm. Enter in "07".
- TCT = Token Technology. Enter in "02".
- restype = Resource type of the meter (Subclass)
- isregistered = Whether the meter should be registered or not, "y" if it should be or "n" if it should not be.
- result = Pass or Fail, whether generation of the token was successful or not, with an appropriate error message describing the reason if a failure occurred. Leave this empty when creating the csv file.

Meta	MeterPAN	Organisation	Name	SGC	KRN	TI	EA	TCT	restype	isregistered	result
	#62141158436	Kew Manors	J Singh	#123456	1	1	7	2	0	y	
	#62141158444	Kew Manors	N Elga	#123456	1	1	7	2	1	y	
	#62141158451	Kew Manors	V May	#123456	1	1	7	2	0	n	

An example CSV file could then be:

Meta,MeterPAN,Organisation,Name,SGC,KRN,TI,EA,TCT,restype,isregistered,result
 ,#62141158436,Kew Manors,J Singh,#123456,1,1,7,2,0,y,
 ,#62141158444,Kew Manors,N Elga,#123456,1,1,7,2,1,y,
 ,#62141158451,Kew Manors,V May,#123456,1,1,7,2,0,n



4.1.5.2 Perform the Import

Once the CSV file has been created, follow these steps to perform bulk meter import:

- From the **TsmWeb-STs** home-page click **STs**, and then **STs ADMINISTRATION**
- Click on the **Bulk Meter Import** tab.
- Click **Choose File** and select the CSV file.
- Click **Import Data** to start importing each meter in the file.

If done successfully, a table will be displayed showing all the meters that were imported and a CSV file containing the results can be downloaded.



Note that files with up to 10,000 records are supported. Including more records per file is not recommended and should be broken up to have 10,000 or less per file.

4.1.6 Bulk Meter Key Change

4.1.6.1 Create File

Bulk meter Key Change allows the operator to key change multiple meters at once. Meter information is stored in a Comma Separated Values (CSV) file. The CSV file will need to be created, which can be done using a text editor or in Microsoft Excel (save the spreadsheet as a .csv file). The first line of the file (indicating the columns) should be:

Meta,MeterPan,Sgc,Krn,Ti,Ea,Tct,toSgc,toKrn,toTi,Tokens,Result

Where:

- Meta = Empty column
- MeterPan = Should start with a hash "#", followed by the meterPan
- Sgc = The source supply group code, a 6 digit number, e.g. 123456
- Krn = The source key revision number, e.g. 1
- Ti = The source tariff index, e.g. 01
- Ea = The source encryption algorithm, e.g. in most cases this will be 7
- Tct = The source token carrier technology, e.g. in most cases this will be 2
- toSgc = The destination supply group code, a 6 digit number, e.g. 123456
- toKrn = The destination key revision number, e.g. 1
- toTi = The destination tariff index, e.g. 01
- Tokens = The computed tokens will be stored in this column
- Result = Pass or Fail, whether generation of the token was successful or not

Meta	MeterPan	Sgc	Krn	Ti	Ea	Tct	toSgc	toKrn	toTi	Tokens	Result
	#62141158436	123456	1	1	7	2	654321	1	2		
	#62141158444	123456	1	1	7	2	654321	1	2		
	#62141158451	123456	1	1	7	2	654321	1	2		

An example CSV file would then be:

```
Meta,MeterPan,Sgc,Krn,Ti,Ea,Tct,toSgc,toKrn,toTi,Tokens,Result
,#62141158451,123456,1,1,7,2,654321,1,2,,
```



```
,#62141158444,123456,1,1,7,2,654321,1,2,,
,#62141158451,123456,1,1,7,2, 654321,1,2,,
```

4.1.6.2 Perform Bulk Meter Key Change

This section describes how to change meter keys in bulk.

- From the **TsmWeb-STs** home-page click **STS**, and then click on **STS Administration**.
- On the STS Administration Page click the **Bulk Meter Key Change** tab, Bulk Meter Key Change page is displayed.
- Click **Choose File** and navigate to where your file is located and select it.
- Click **Go**, to change meter keys in bulk.

4.1.7 Bulk Engineering Tokens

4.1.7.1 Create File

Bulk engineering tokens allows the operator to generate engineering tokens for multiple meters at once. Meter information is stored in a Comma Separated Values (CSV) file. The CSV file will need to be created, which can be done using a text editor or in Microsoft Excel (save the spreadsheet as a .csv file). The first line of the file (indicating the columns) should be:

```
#HDR:meta,meterpan,sgc,krn,ti,ea,tct,maxPowerLimitToken,clearCreditToken,clearTamperToken,maxPhaseLimitInputToken,result
```

Where:

- Meta = Empty column
- MeterPan = Should start with a hash "#", followed by the meterPan
- Sgc = The source supply group code, a 6 digit number, e.g. 123456
- Krn = The source key revision number, e.g. 1
- Ti = The source tariff index, e.g. 01
- Ea = The source encryption algorithm, e.g. in most cases this will be 7
- Tct = The source token carrier technology, e.g. in most cases this will be 2
- maxPowerLimitToken = The computed token will be stored in this column
- clearCreditToken = The computed token will be stored in this column
- clearTamperToken = The computed token will be stored in this column
- maxPhaseLimitInputToken = The computed token will be stored in this column
- Result = Success or Fail, whether generation of the tokens was successful or not

Meta	MeterPan	Sgc	Krn	Ti	Ea	Tct	maxPowerLimitToken	clearCreditToken	clearTamperToken	maxPhaseLimitInputToken	Result
	#62141158436	123456	1	1	7	2					
	#62141158444	123456	1	1	7	2					
	#62141158451	123456	1	1	7	2					

An example CSV file would then be:

```
#HDR:meta,meterpan,sgc,krn,ti,ea,tct,maxPowerLimitToken,clearCreditToken,clearTamp
erToken,maxPhaseLimitInputToken,result
,#62141158436,123456,1,1,7,2,,,,,
,#62141158444,123456,1,1,7,2,,,,,
,#62141158451,123456,1,1,7,2,,,,,
```

4.1.7.2 Perform Bulk Engineering Token Generation

This section describes how to generate engineering tokens in bulk.

- From the **TsmWeb-STs** home-page click **STS**, and then click on **STS Administration**.
- On the STS Administration Page click the **Bulk Engineering Tokens** tab, Bulk Engineering Tokens page is displayed.
- Select which engineering tokens you wish to generate
- Click **Choose File** and navigate to where your file is located and select it.
- Click **Go**, to change meter keys in bulk.
- Alternatively you can click **Download Template** to download an example .csv file

4.1.8 Non MSE

This section describes how to generate a **NON MSE** (Non-Meter Specific Engineering token).

- From the **TsmWeb-STs** home-page click **STS**, and then click on **STS Administration**.
- On the STS Administration Page click the **Non MSE** tab, Non MSE page is displayed.
- Click relevant option from list of options below:

Please note that the system supports the 11 and 13-digit meter numbers.

- Generate InitMeterTest token for 11-digit PAN = use to test an 11-digit PAN.
- Generate InitMeterTest token for 13-digit PAN = use to test a 13-digit PAN
- Advanced options (use this option to perform specific test on a meter):
 - **Pretest** = use to select a specific test to be done a meter.
 - **Subclass** = use to set the type of token to be generated, e.g. electricity, water etc.
 - **MfrCode** = use to set manufacture meter code (Please note that this value also changes when Pretest is selected).
 - **Control (Hex)** = use to specify hex version of the type of pretest (Please note that this value also changes when Pretest is selected).
- Click **Vend** and the Non-Meter Specific Engineering Token is generated.

4.2 STS SM Status

Each time a token generation is performed the number of remaining transactions/vends is decremented. If the module's transaction counter runs low, a warning will be displayed on screen as a reminder to purchase more transactions. The point at which the software starts warning that the number of remaining transactions is low, can be set in the preference manager by modifying the sts.alert.lowVendsWaterMark preference. A transaction counter increase instruction can only be requested from Prism and in multiples of 10,000. Contact Prism to request the desired amount of transactions. After payment is made, an email will be sent from Prism with a file attachment containing an instruction for the TSM to increase the transaction counter. An example instruction looks like:

```
--VENDCREDIT BEGINS--
0335A8BED88D8839AC054A53758FA10F0155E8073576D19B33F47237BA01B392
```

```

D0DF951362D7D648C28806BDD026B387679DAEAB6FA5D733B692D58F65198CBB
...
116C6051194CFCA447B366AE9E9EB7321A1AE0E3AF2069EB25034334A259F685
7CBE6B5501CB02020A6FBA62FE305320
--VENDCREDIT ENDS--

```

To apply the instruction, and thus increase the transaction counter by the requested amount:

- From the TsmWeb-STs home-page click **STS** on the left.
- In the box below **Apply Prism Instruction**, paste in the instruction that was received from Prism. Be sure to include both the **--VENDCREDIT BEGINS--** and **--VENDCREDIT ENDS--** lines, and everything in-between.
- Click **Update**.

The transaction counter will be incremented by the requested amount.

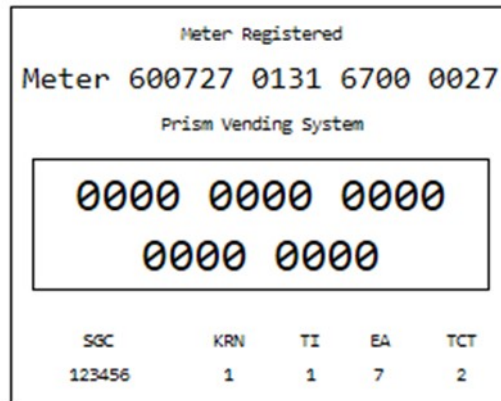
4.3 STS Vending

4.3.1 How to register a meter

This section describes the procedure for registering a meter. Note that meter registration is required before a user can utilize the "Simple" vending UI as that UI does not have the ability to blind vend.

- From the TsmWeb-STs home-page click **STS Vending**.
- Enter in the 11-digit Meter Number and click on the **Go** button.
- Enter in the Meter Information:
 - **SGC** = Supply Group Code, a 6-digit number, e.g. 123456
 - **TI**=Tariff Index of the meter. e.g. 01
 - **KRN** = Key Revision Number. e.g.1
 - **TCT**= Token Technology. Enter the number 2
 - **EA**=Encryption Algorithm. Enter the number 7
 - **Resource Type** = The resource type (subclass) of a meter
 - Check the **Registered** checkbox.
- Click **UPDATE**.
- A Meter registration receipt will be issued which looks similar to the one below





4.3.2 Generate Credit Token

This section describes the procedure to generate a credit token.

- From the **TsmWeb-STS** home-page click **STS**, and then click on **STS Vending**.
- On the STS Vending page click **Credit** tab.
- On the amount text box type in the rand value amount or number of units depending on the credit type of the credit token (see advanced steps below on how to set the credit type).
- Click the relevant button to generate the credit token (The enabled and disabled buttons are dependent on the type of resource selected. See advanced steps below on setting Resource Type).
- For advanced settings on the **Credit** tab check the advanced check box. The below options are displayed.
 - **Resource Type** = use to set the type of resource the credit token will be. (E.g. electricity, water, gas etc.).
 - **Vend Type** = use to set the type of vend the credit token will use. (Either prepayment of free issue).
 - **Credit** = use to set the credit type of the credit token. (Either units or currency).
 - **Number of tokens** = use to set the number of credit tokens to be generated.
 - **Value (per token)** = use to set the value of the credit token. (Number of Units if credit type is units and value amount if credit type is currency).
- Click **Vend** button to generate a credit token.

If a credit token was generated successfully, will redirect to the Tokens tab and a success message will be displayed on a green message bar. If the display bar is red in colour an error would have occurred, please see Appendix A section 6.2 for further interpretation of the error displayed.

Credit
Verify Token
Engineering
Meter History
Meter Configuration
Key Change
Tokens

☐ Advanced

VEND \$20 ELECTRICITY

VEND \$50 ELECTRICITY

VEND ELECTRICITY

VEND WATER

VEND \$20 WATER

VEND \$50 WATER

Amount \$

Prism Payment Technologies (Pty) Ltd Reg No. 1990/005062/07
Directors: H. G. Kotzé, N. Pillay, A.M.R Smith*
* British
Company Secretary: C.W. van Straaten

www.prism.co.za

4.3.2.1 Quick Vend Customisation

Please note that the **Vend \$20 Electricity** and **Vend \$50 Electricity** or **Vend \$20 Water** and **Vend \$50 Water** are used as the default quick vends as those vend amounts are frequently used. These amounts can be changed or new amounts can be added for all subclass values.

- From the **TsmWeb-STIS** home-page click **STS**, and then click on **STS Vending**.
- Enter the desired meter number
- Click on the **Quick Vend** edit button

Edit quick vend buttons:

- Click **Apply** to save the changes



4.3.3 Verify Token

This section describes the how to verify a token.

- From the **TsmWeb-STs** home-page click **STS**, and then click on **STS Vending**.
- On the STS Vending page click the **Verify Token** tab, Verify Token page is displayed.
- On the Token textbox type in the token voucher number.
- Click **Verify** to verify the token.

If the verification of a token was successful the application will redirect to the Tokens tab and a success message will be displayed on a green message bar below the option tabs. If the display bar is red in colour an error would have occurred, please see Appendix A section 6.2 for further interpretation of the error displayed.

4.3.4 Engineering

This section describes the how to perform various engineering feature on meter.

- From the **TsmWeb-STs** home-page click **STS**, and then click on **STS Vending**.
- On the STS Vending page click the **Engineering** tab, engineering page is displayed.
- Select the relevant check box or check boxes on the list of option displayed:
 - **Set Max. Power limit** = use to set Max power. e.g. 6000
 - **Clear Credit** = use to clear Credit.
 - **Clear Tamper** = use to clear tamper.
 - **Set Max. Phase Power Unbalance Limit** = use to set maximum power. e.g. 6000
- Click **Vend MSE Tokens** button.

If the verification process was successful the application will redirect to the Tokens tab and a success message will be displayed on a green message bar below the option tabs. If the display bar is red in colour an error would have occurred, please see Appendix A section 6.2 for further interpretation of the error displayed.

4.3.5 Meter History

This section describes how to view a specified number of transaction on meter.

- From the **TsmWeb-STs** home-page click **STS**, and then click on **STS Vending**.
- On the STS Vending page click the **Meter History** tab, Meter History page is displayed.
- In the **Show Last** textbox type in the desired number of transactions to be displayed, the page will refresh and display the specified number of transactions on a specific meter.

Please note that the default number of transactions is 20.

4.3.6 Meter Configuration

This section describes how to configure meter settings.

- From the **TsmWeb-STs** home-page click **STS**, and then click on **STS Vending**.
- On the STS Vending page click the **Meter Configuration** tab, Meter Configuration page is displayed.
- Type in the relevant information, see below for description of each field:
 - **Organization** = use to set the name of your organization.
 - **Name** = use to set the name of the user setting up the meter configurations.
 - **Supply Group Code (SGC)** = use to set supply group code. e.g. 123456
 - **Key Revision Number (KRN)** = use to set Key Revision number. e.g. 1
 - **Tariff Index (TI)** = use to set tariff index. e.g. 1
 - **Encryption Algorithm** = use to set Encryption Algorithm. e.g.



- **Token Carrier Type (TCT)** = use to set Token Carrier Type.
- **Resource Type** = use to set Resource Type. e.g. Electricity, water, gas etc.
- **Registered** = use to set if the meter is registered on the systems database.
- Check the **Registered** check box.
- Click **Save** to save the meter configuration.

If the meter was configured successfully the application will redirect to the Tokens tab and a success message will be displayed on a green message bar below the option tabs. If the display bar is red in colour an error would have occurred, please see Appendix A section 6.2 for further interpretation of the error.

4.3.7 Key Change

This section describes how to perform a key change on a meter.

- From the **TsmWeb-STs** home-page click **STS**, and then click on **STS Vending**.
- On the STS Vending page click the **Key Change** tab, Key Change page is displayed.
- Type in the relevant information, see below for description of each field:
 - **Supply Group Code (SGC)** = use to specify supply group code. a 6-digit number, e.g. 123456
 - **Key Revision Number (KRN)** = use to specify Key Revision Number. e.g. 01.
 - **Tariff Index (TI)** = use to specify Tariff Index of the meter. e.g. 01.
 - **Registered** = use to specify if the meter is registered on the system database.
- Check the **Registered**.
- Click **Issue Key Change** button.

If the key change procedure was executed successfully, the application will redirect to the Tokens tab and a success message will be displayed on a green message bar below the option tabs. If the display bar is red in colour an error would have occurred, please see Appendix A section 6.2 for further interpretation of the error.

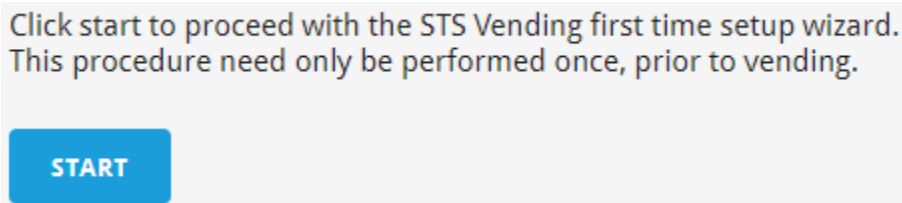
4.3.8 Tokens

The Tokens tab displays the history of the current session.

4.4 STS Vending Quick SETUP

This section describes the STS Vending Quick Setup procedure used to set up essential STS Vending settings for the first time. Please use the previous button to navigate back when necessary.

- From the **TsmWeb-STs** home-page click **STS**, then click on **STS Vending Quick Setup** and STS Vending Quick Setup is displayed.



- Click **START** button and the Select TSM as the next step.



1 Select TSM

Silicon Labs CP210x USB to UART Bridge (COM4)

The selected TSM will be activated on proceeding to the next step

< PREVIOUS

ACTIVATE TSM >

- Select the desired **TSM** from the list box as shown in the image above and click **Activate TSM**, The Set preference is displayed as the next step.



1 Select TSM
2 Set Preferences

Low vends remaining alert amount

When the number of vends remaining drops below this value, an alert will appear.

Currency symbol

The currency symbol to use for STS vending.

Transaction fee

Vendor transaction fee

The transaction fees per vend.

< PREVIOUS
SET PREFERENCES >

- Enter the preferred preferences:
 - Low vends remaining alert amount** = use to set the number of vends to be reached before an alert appears.
 - Currency Symbol** = use to set the preferred currency symbol.
 - Transaction fee** = use to set transaction fee.
 - Vendor Transaction Fee** = use to set cost per vend.
- Click **Set Preference** and the Set Tariffs is displayed as the next step as shown in the image below.



1 Select TSM
2 Set Preferences
3 Set Tariffs

Supply Group Code	Tariff Index	Subclass	Active Date	Tariff Per Unit
123456	1	0	2018-06-01	\$ 1.0000
123457	2	0	2018-06-01	\$ 1.0000

Supply Group Code

Tariff Index 01, 02, 03 etc. This tariff index is used when you register the meter or do a blind vend

Subclass

Active Date Date that this tariff will be active from

Tariff per unit (\$/kWh). Up to 4 decimal places

4.5 How to issue a Credit Update Token

This section describes the procedure for issuing a credit update token.

- From the **TsmWeb-STs** home-page click **STS** and then **STS Vending**.
- Complete the meter registration described in **Error! Reference source not found.** (section **Error! Reference source not found.**), if it has not been done so already.
- Enter in the Meter Number and click **Go**.
- Select the **Credit** tab if it is not already selected.
- Enter in the Currency Value.
- Click **Vend Electricity** or **Vend Water** depending on the resource type you want to vend (other resource types are available if the **Advanced** checkbox is checked).



Sale - Credit:Electricity				
Meter 600727 0131 6700 8871				
2016-06-01 16:37				
Prism Vending System				
Token type 00 ; TID 12403597				
2509 2033 6777				
6612 5269				
SGC	KRN	TI	EA	TCT
123456	1	1	7	2
Value	Tariff	Units		
ZAR 20.00	1.00000	20.00 kWh		

Alternatively, you can use the advanced interface by clicking the **Advanced** checkbox. In this mode you can specify Resource Type, Vend Type (Prepayment or Free Issue), Credit Type (Units or Currency), the number of tokens to vend, and the amount (units depending on Resource Type or Credit Type).



5 TsmWeb-STS Web API

The TsmWeb-STS application software includes a built-in web service which allows various vending requests to be issued over the HTTP interface. Refer to the document PR-D2-1000 TsmWeb-STS Web Vending API for further information.

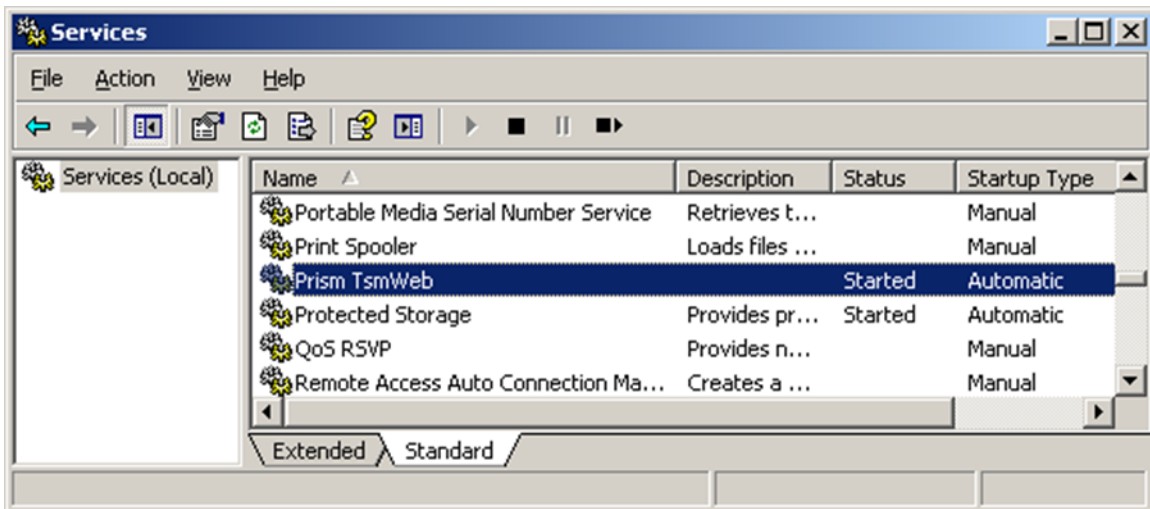


6 Appendix A

6.1 Starting the service

The TsmWeb-STs browser application only runs when the service is started. To check the status of the TsmWeb-STs service, or to stop or start the service, follow these instructions:

- Start the Windows Services Control Panel applet by clicking on:
Start -> Control Panel -> Administrative Tools -> Services
- In the right-hand pane of the services window locate the **Prism TsmWeb** service



- Control of the service can be performed by right clicking on “Prism TsmWeb”. Select “Start” to start the service or “Stop” to stop the service

6.2 Changing the TLS port

If TsmWeb-STs is running on a windows computer running a server operating system, there may be a conflict between IIS (Internet Information Services) and TsmWeb-STs. If IIS is running on the computer port 443 will already be in use and the following error will be displayed when trying to launch TsmWeb-STs

Forbidden

Resources access requires a secure connection (due to server config), however the TLS listener failed to start

To change the port that TsmWeb-STs uses for secure HTTPS connections, perform the following actions:

1. Stop the Service. Refer to section 6.1 Starting the service and stop the TsmWeb service.
2. Using windows explorer navigate to c:\Program Files (x86)\Prism\TsmWeb-STs
3. Using notepad edit tsmweb.prop and add the following entry to the bottom of the file:
 - a. tls.port=4443
4. Save the tsmweb.prop file and restart the service.

6.3 Configuring Remote Access – Best Practices

There may be a need to access TsmWeb-STs remotely, this could just be on the local area network (LAN) or on the internet. This section gives a high-level overview of what is required and things to be aware of. The actual configuration would need to be done by an I.T professional with physical access to the hardware required.

The first step would be to configure and confirm access to TsmWeb-STs over the LAN. Once LAN access is working, remote internet access can be configured.

6.3.1 Local Area Network (LAN) Access

From the PC running TsmWeb-STs perform the following actions:

- Launch TsmWeb in your web-browser and click on Preferences Manager
- Take note of the **httpd.port** value (default is 80)

TSM-Web Preference Manager		
Name	Status	CurrentValue
account.lockout.attempts	default (Edit)	3
account.lockout.duration.seconds	default (Edit)	60
account.password.expiry.notice.days	default (Edit)	31
account.password.forbid.recent.number	default (Edit)	1
account.password.grace.login.days	default (Edit)	2
account.password.maximum.age.days	default (Edit)	366
account.smartcard.tvpWindow	default (Edit)	120
conductor.loglevel	user-set	0x7f606000
conductor.maxClients	default	64
conductor.minIdleTime	default	60000
conductor.port	user-set	5100
httpd.address	user-set	0.0.0.0
httpd.host	default	dbn-cia
httpd.port	user-set	80
httpd.svcport	default	8080

- **httpd.address** should be set to 0.0.0.0
- Open a windows command prompt window and run the command **ipconfig.exe**
- Take note of the IPv4 address

```

C:\> Command Prompt

Ethernet adapter Ethernet:

    Connection-specific DNS Suffix  . : 
    Link-local IPv6 Address . . . . . : fe80::ada3:23c5:5861:62f1%7
    IPv4 Address. . . . . : 10.11.12.71
    Subnet Mask . . . . . : 255.255.255.0
    IPv4 Address. . . . . : 10.11.13.71
    Subnet Mask . . . . . : 255.255.255.0
    IPv4 Address. . . . . : 192.168.0.71
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 10.11.12.254
  
```

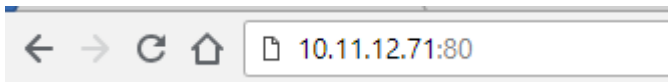
- From the client pc on the same network open a windows command prompt window and run the following command:
 - **ping <ip address>** where <ip address> is the IPv4 Address from the previous step
 - *e.g. ping 10.11.12.71*
 - The ping command should return successfully.

```
U:\>ping 10.11.12.71

Pinging 10.11.12.71 with 32 bytes of data:
Reply from 10.11.12.71: bytes=32 time<1ms TTL=128
Reply from 10.11.12.71: bytes=32 time<1ms TTL=128
Reply from 10.11.12.71: bytes=32 time<1ms TTL=128
Reply from 10.11.12.71: bytes=32 time<1ms TTL=128

Ping statistics for 10.11.12.71:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

- Now open the Firefox web-browser on the client computer and browse to the **IP Address** and **Port** found in the previous steps.



TSM-Web TSM Status

TsmWeb-STs

Version	4.55.0
Up since	2018-07-10 14:52:09

Network

Network address	127.0.0.1
TLS certificate expiry	2020-06-05 (CCYY-MM-DD) 17:05:18

TSM

TSM family	TSM210
TSM UID	91001400
Application Firmware	
Application License	CVS03V05
STS Firmware ID	CVS03V05
STS Module ID	91001400
STS Tx balance	19911

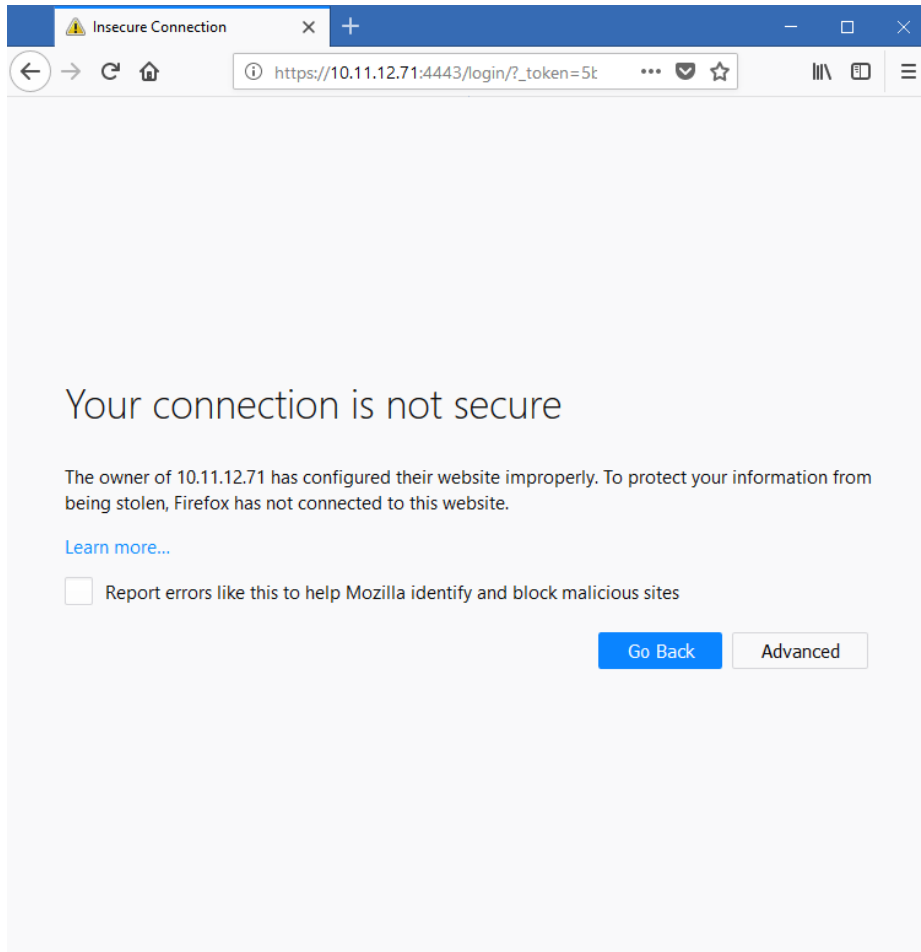
Web Interface

Web UI port	80
Web service port	8080

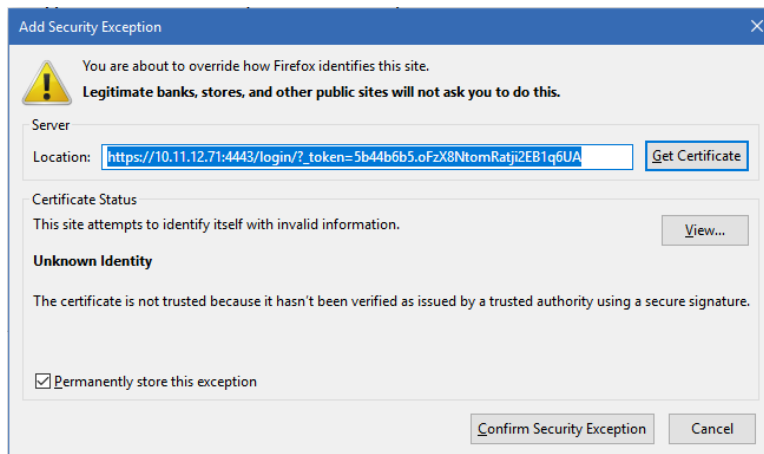
Generated at 2018-07-10 15:29:52 by TsmWeb-STs v4.55.0 in 665.095ms on DBN-CIA. | **DEBUG mode** | Memory Usage: 29.02 MB

- A warning will appear indicating that the connection is not secure.



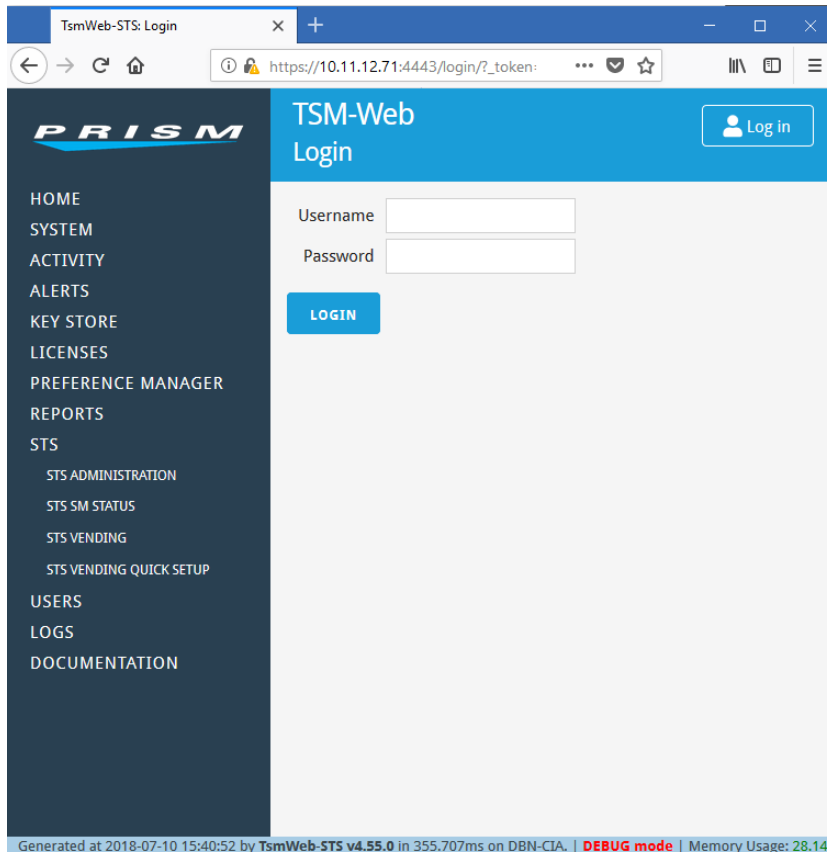


- Click **Advanced** and then click **Add Exception**



- Finally click **Confirm Security Exception**
- You will then be re-directed to the logon page





6.3.2 Internet Access

This section gives a high-level overview of the configuration required to access TsmWeb-STs remotely over the internet. First ensure that TsmWeb-STs can be accessed locally over the LAN as described in section 6.3.1 Local Area Network (LAN) Access.



We do not recommend putting the PC running TsmWeb-STs directly on the internet as this could allow unauthorised access and attacks

The best solution would be for an I.T Professional to set up VPN access for each user on the network which hosts TsmWeb-STs.

A user would need to VPN onto that network and then use their web-browser to access TsmWeb-STs

6.4 Error Messages

This section lists fatal errors and warnings you may encounter when using the STS Management with the TSM250. Some of the Errors and causes are listed below.

Forbidden: Resources access requires a secure connection (due to server config), however the TLS listener failed to start

Another service is using port 443. Refer to section 6.2 Changing the TLS port

Error while enabling vending: Serial comms error with TSM2xx: Timeout waiting for response (2000 ms)

The TSM has not been selected. Go to SYSTEM and select TSM.

STS API error CMD_DISABLED_ERROR (code 97)

Vending Not Enabled. Enable Vending from STS STATUS menu

Other parameters invalid for request: input 'units' is not an integer or is out of range

Fees might exceed the value of the token or there may be an invalid non-integer value in the fee or tariff

Format of tariff is unreadable. Please use the format x.xxxx, e.g. 3.35 for \$3.35 per unit

Use correct format as indicated in the GUI

Tariff record not available for SGC '400029, TI '1' and Subclass '1'

The Tariff record and meter data do not correspond.

Check the meter Configuration data against the Tariff data and ensure there is a valid Tariff for the meter e.g. SGC, TI, KRN

Invalid meter ID: STS Data Not Valid: invalid PAN (wrong length)

The meter PAN is not a valid STS number. Use an 11 or 13-digit STS PAN

Vending Key not found for sgc='xxxxxx' krn='n'

The key revision number for the selected SGC is not available in the key file.

SGC xxxxxx not found in database

The requested SGC is not available in the TsmWeb-STs database. Check that the correct key load file has been uploaded.

Invalid sts token representation "1234555", should be 20D

When verifying a token, an invalid STS token was presented, it should be 20 digits

Token failed to verify

Failed to verify a token

The token may have been generated on another system

The key file may have changed since the token was generated

View the report 'Vend History' to see if the token can be located

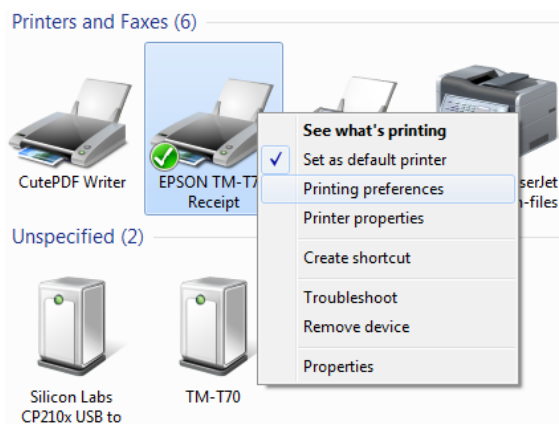


6.5 Optional (Configuring the Epson TM-T70 POS Printer)

This section describes the process for configuring the EPSON TM-T70 point of sale printer. **Although this guide applies specifically to that model printer, it can be used as a guideline for other POS printers.**

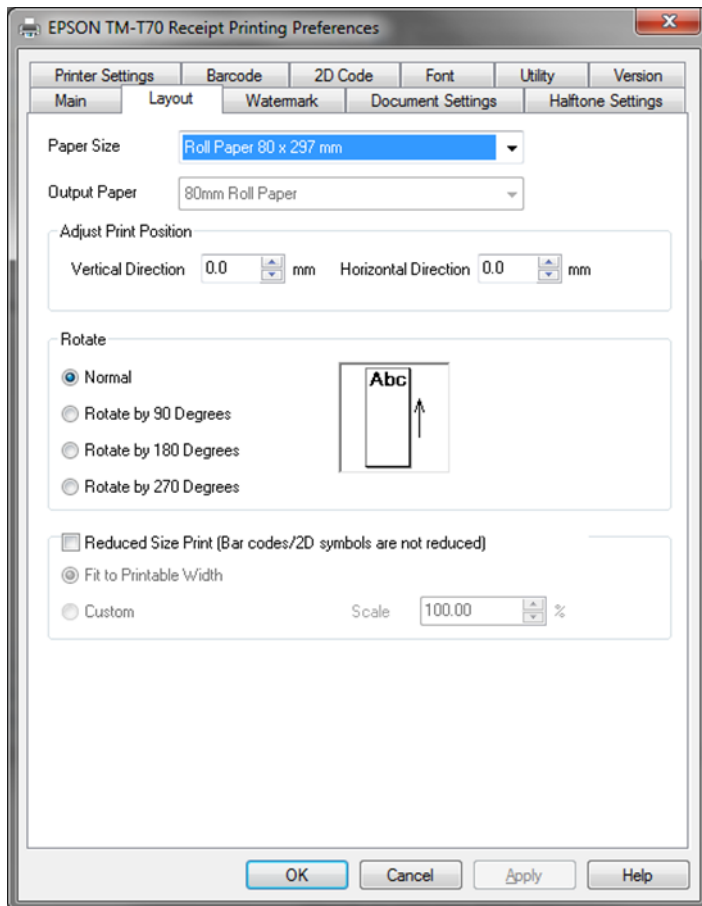
6.5.1 Configure the printer

- Install the EPSON TM-T70 drivers using the supplied installation media. Refer to the hardware installation manual supplied with the printer.
- Once the printer has been installed:
- Browse to **Devices and Printers**
- Right click on the EPSON TM-T70 printer. Click **Printing preferences**



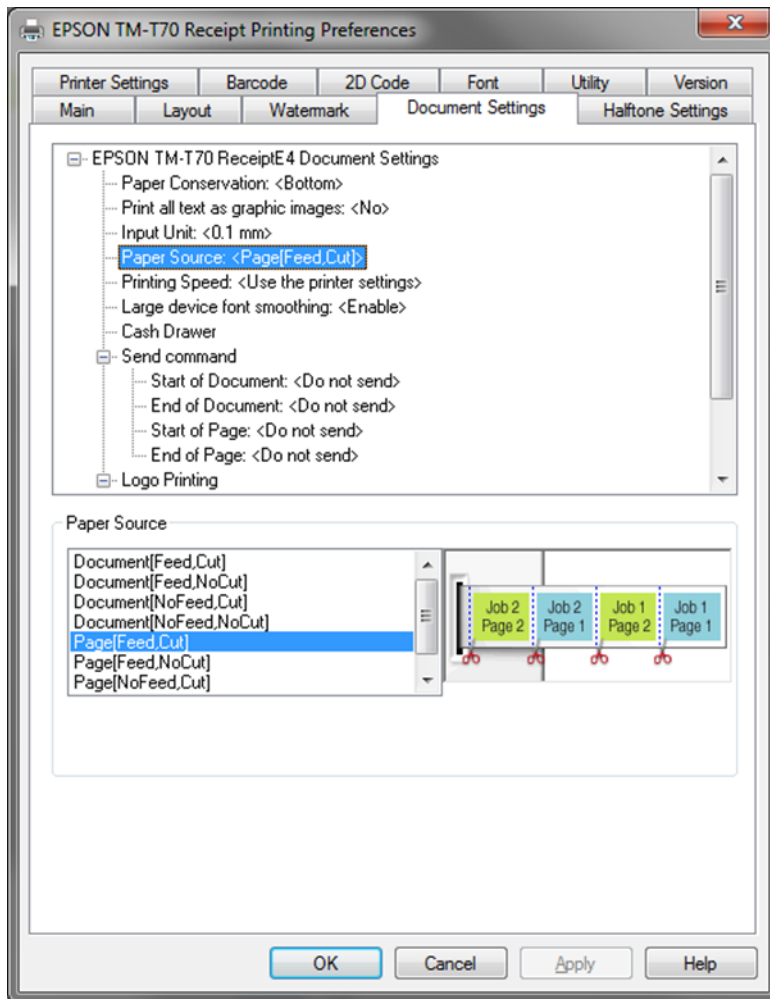
- Click **Layout**. Select **Roll Paper 80 x 297 mm** as the **Paper Size**





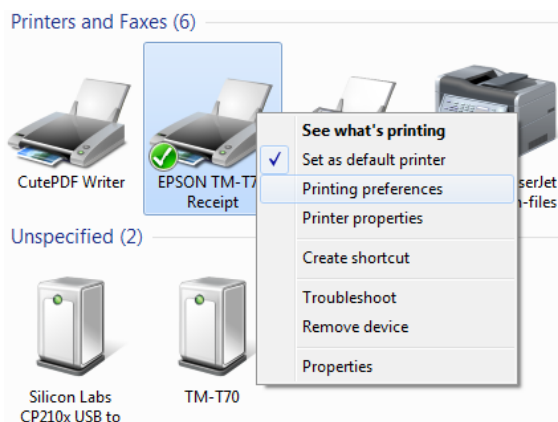
- Click **Document Settings**
- Change **Paper Source** to <Page[Feed,Cut]>





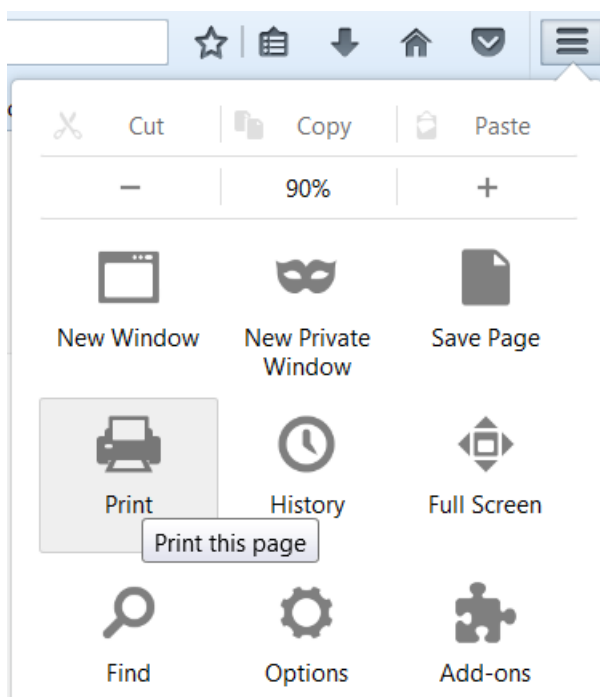
6.5.2 Set the printer as the default printer

- Browse to **Devices and Printers**
- Right click on the EPSON TM-T70 printer. Click **Set as default printer**

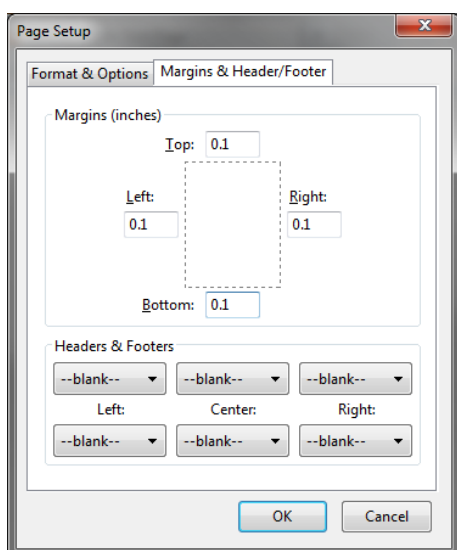


6.5.3 Configure Firefox to print

- In Firefox, click on the options button and click **Print**.



- In the menu at the top, click **Page Setup**.
- In that window, click on the **Margins & Header/Footer** tab.
- Set the margins to 0.1 on all sides and set all headers & footers to **--blank--**.



- Click **OK**



7 Reports

The Reporting page is the starting point for accessing reports on the various operations of TsmWeb. The page displays a list of modules for which reports can be generated. The page can be accessed via the “Reports” link in the menu on the left.

Modules and reports that are relevant to STS operations are:

- **(STS Administration) Transaction Count Control:** Report of updates to the transaction counter (stored on the TSM) done via TsmWeb.
- **(STS Administration) Password Reset Control:** Report of password reset requests (for the password stored on the TSM) done via TsmWeb.
- **(CDU.Report.stsVending) Meter History:** Reports past activities performed via TsmWeb involving a specified meter.
- **(CDU.Report.stsVending) Vending History:** Report of all vending operations.
- **(CDU.Report.stsVending) Vending History of a user:** Report of all vending operations by a particular user.
- **(CDU.Report.stsVending) Vending History of Web API:** Report of all vending operations by the Web API
- **(CDU.Report.stsVending) Vend Credit History:** Report of all Vend Credit tokens generated via TsmWeb.
- **(CDU.Report.stsVending) Vend Credit History of a user:** Report of all Vend Credit tokens generated via TsmWeb by a particular user.
- **(CDU.Report.stsVending) Vend Credit History of Web API:** Report of all Vend Credit tokens generated via TsmWeb by the Web API.
- **(CDU.Report.stsVending) Meters:** A list of all meters.
- Reports can be saved in CSV format by clicking the **Download as CSV** link at the bottom of a report.



8 Maintenance

8.1 IT hygiene

Persons having physical access to the PC hosting TsmWeb-STs should take care to exercise good hygiene in handling USB-connected peripherals (including hard drives & flash drives) and removable media. These devices & media form a communication channel with the server and can introduce malware.

We recommend the following:

- The PC hosting TsmWeb-STs should have anti-virus software installed with up-to-date definition files. The anti-virus should be configured to scan USB drives on access.
- Keep USB drives used for backup separate from other USB drives (for example those used to transfer setup files). Do not use backup drives for any other purpose.
- Use a client PC rather than accessing the PC hosting the TsmWeb-STs user interface from the console.
- Users can read the following articles to better understand the threat:
 - [USB Hygiene](https://blog.kaspersky.com/usb-hygiene/2471/) (https://blog.kaspersky.com/usb-hygiene/2471/)
 - [Why the Security of USB Is Fundamentally Broken](http://www.wired.com/2014/07/usb-security/) (http://www.wired.com/2014/07/usb-security/)

8.2 Backup

This section describes how to set up automated backups. It does not describe how to make manual backups; however, a manual backup can be made by running the scheduled task created in section 8.2.4.2.

8.2.1 Data to be backed up

All TsmWeb-STs data is contained in the following files which must be backed up periodically:

- %TSMWEBDIR%\tsmweb.sqlite*
- %TSMWEBDIR%\tsmweb.prop
- [Optional] %TSMWEB%\logs*

where %TSMWEBDIR% is the folder in which the TsmWeb-STs software is installed (default: "C:\Program Files (x86)\Prism\TsmWeb-STs").

We recommend that you use the backup scripts packages with the TsmWeb-STs software (and described below), but **if the TsmWeb-STs service has been stopped** then it is sufficient to copy these files to create a backup.

8.2.2 Backup frequency

We recommend backing up the TsmWeb-STs data after the end of each working day (for example using a scheduled task each night, as explained in section 8.2.4.2).

Backups should also be done **before** any TsmWeb-STs upgrades are performed.



8.2.3 Storing backups



We recommend the following:



- Backups should be saved onto a portable physical medium, not the host's hard drive. A USB-connected mass-storage device is suitable.
- The integrity and confidentiality of backups should be protected, for example by means of encryption.
- Backups should be physically or electronically transferred off-site on a regular basis and stored off-site in a manner that is both secure (against unauthorised access) and reliable.
 - Physical transfer can be accomplished by cycling through a set of USB mass-storage devices, where at any time at least one device is on-site, one or more are off-site, and at most one is in transit.
 - Electronic transfer can be accomplished via e-mail, FTP, or other access-controlled file sharing protocols.

8.2.4 Recommended backup mechanism

The backup script is executed daily using the Windows Task Scheduler, an encrypted backup is placed on a USB mass-storage device.

Follow these steps to set up automated backups using these scripts:

8.2.4.1 Select/Create a user to run the backup task

The backup task should be executed by a user account that is a member of the Administrators group. Select an appropriate user account or create one if necessary.

To create a user account in the Administrators group:

- Right click Computer → Manage; Click Local Users and Groups on the left sidebar; Double click Users on the main panel; Right click → New User
- Enter the desired user name and password
- Untick User must change password at next logon; Tick password never expires; Tick user cannot change password.
- Click Create
- Right click on the user → Properties; Click Member Of; Click Add
- Type Administrators; Click Check Names. The name will be resolved.
- Click OK
- Log off



Log in using the selected backup user account. The rest of this configuration must be performed using the backup user's account.

8.2.4.2 Set up a Windows Scheduled Task

Create a new Scheduled Task:



Caution: you must be logged in using the backup user's account when you perform this step.

- Right Click Computer → Manage; Click Task Scheduler in the left side pane



- Click Import Task and select the following task template located in the following folder:
 - %TSMWEBDIR%\backup\TsmWeb-STs_Backup.xml
- Click Change User or Group...; type in the backup user's account name (**the user you are logged in as**); Click Check Names; The username will be resolved; Click OK
- Click the Actions tab; You must set up an action to run the TsmWeb_backup.bat'
 - If you have installed the TsmWeb-STs software in a non-standard location you must change the location of the 'TsmWeb_backup.bat' file.
 - Set the arguments for the 'TsmWeb_backup.bat' script as follows:
 - All arguments should be placed in double-quotes, e.g. "argument".
 - The first argument is the folder in which to store backup files (ideally a folder on a USB mass-storage device), e.g. "E:\tsmweb-sts-backups" (including the double-quotes).
 - The second argument is the product type, in this case "sts" (including the double-quotes).
 - Overall example arguments to backup.bat:
"E:\tsmweb-sts-backups" "sts"
 - Click OK
- Click OK to create the task
- Test the task:
 - Click on the Task Scheduler Library; Right Click TsmWeb-STs_Backup → Run
 - Confirm that the backups get saved onto the flash drive.



You should dedicate a USB slot to you mass-storage backup media. If you plug the USB drive into a different USB slot its drive letter will change and your backups will fail



8.2.4.3 Diagnostics

The following diagnostic mechanisms are available if your backups are not working as expected:

- Application Log: Backup attempts and results are logged to the Application Log with the Source 'TSMWEB_STS'. To view the Application Log with Event Viewer:
 - Right click Computer → Manage; Click and expand Event Viewer in the left side-pane; Expand Windows Logs → Application
 - Click on the Source column to sort by source and look at the 'TSMWEB_STS' entries.
 - Each event indicates a backup start, success, or failure. Failure events include the location of the temporary backup files and logs but *be aware that these may be overwritten by subsequent backup attempts.*
- Temporary Backup Files and Logs:
 - Prism may need a copy of these logs files if asked for support in connection with a problem involving the TsmWeb-STs backups.
 - Temporary backup files and logs are located in %TEMP%\PrismTsmWebBak. To view the contents of this folder:
 - *%TEMP% is the temporary folder for the backup user's account; you must be logged in using the backup user's account to execute the following command(s).*
 - Click the Windows start Orb; Type %TEMP%\PrismTsmWebBak and press enter.
 - An explorer window will be presented which will list the temporary backup files and logs.
 - In some cases a supplementary log file %TEMP%\PrismTsmWebSts.log may exist.

8.3 Restore

8.3.1 Extract the backed-up files

Simply extract the .7z archive to a location on the TsmWeb-STs PC.

7zip be downloaded from: <http://www.7-zip.org/>

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8.3.2 Restore files to the system

- Stop the TsmWeb service
- Delete the SQLite database files from the TsmWeb-STs directory (there will be 3: tsmweb.sqlite, tsmweb.sqlite-shm, tsmweb.sqlite-wal)
- Copy the files that were extracted in the previous section (tsmweb.sqlite, tsmweb.prop & logs folder) from the temporary folder, and paste them into the TsmWeb-STs directory, %TSMWEBSTSDIR%.
- Restart the TsmWeb service.



9 Appendix B

Table 1: Roles and permissions

		admin	operator	auditor	stsVendingLow	stsVendingHigh	stsTechnical	stsManagement	stsFreeissue
HOME		✓	✓	✓	✓	✓	✓	✓	✓
SYSTEM		✓	✓	✓	X	X	X	X	X
ACTIVITY		✓	✓	✓	X	X	X	X	X
ALERTS		✓	✓	✓	X	X	X	X	X
KEY STORE		✓	✓	X	X	X	X	X	X
LICENSES		✓	X	X	X	X	X	X	X
PREFERENCE MANAGER		✓	✓	✓	X	X	X	X	X
REPORTS		✓	✓	✓	X	X	X	X	X
STS	STS ADMINISTRATION	✓	✓	X	X	X	X	X	X
	STS SM STATUS	✓	✓	X	X	X	X	X	X
	STS VENDING	X	X	X	✓	✓	✓	✓	✓
	Credit	X	X	X	✓	✓	X	X	✓
	Verify Token	X	X	X	✓	✓	X	X	✓
	Meter History	X	X	X	✓	✓	✓	✓	✓
	Meter Configuration	X	X	X	✓	✓	✓	✓	✓
	Engineering	X	X	X	X	X	✓	X	X
	Key Change	X	X	X	X	X	✓	X	X
	STS VENDING QUICK SETUP	✓	✓	✓	✓	✓	✓	✓	✓
USERS		✓	✓	✓	X	X	X	X	X
LOGS		✓	✓	✓	X	X	X	X	X
DOCUMENTATION		✓	✓	✓	X	X	X	X	X



10 Amendment History

Version	Description	Person	Date
1.0	Initial draft	CM	2014/08/28
1.1	Updated template. Updated configuration section after simplifying how TsmWeb-STs is configured for first use.	CM, CA	2014/10/31
1.2	Updated TSM250 Driver information	CM	2014/11/04
1.3	Updated document to hopefully be more understandable for clients, based on client feedback.	KH	2015/04/28
1.4	Added sections "Configure TsmWeb-STs using the Quick Setup Wizard" and "Bulk Meter Registration".	KH	2015/05/05
1.5	Updated "TsmWeb-STs Functions" section to reflect UI changes in TsmWeb-STs.	KH	2015/10/27
1.6	Added a section on how to create bulk meter key change tokens.	CM	2016/04/01
1.7	Ported the document to the Zazoo template. Format of the bulk meter registration file has changed to match that of the bulk key change import file.	CA	2016/08/10
1.8	Bulk meter key change now goes via the CDU. The file format of the bulk meter key change file has changed. Added two new reports: Vend history of a user (stsVending) and Vend credit history of a user (stsVending)	CA	2016/09/30
1.9	Meter registration (including bulk) now allows the resource type of a meter to be configured. Clarified the format of the meterID when performing a bulk meter key change. The full meterID is required	CA	2017/01/29
2.0	Changed "Bulk Meter Registration" to "Bulk Meter Import", since meters can now be registered or deregistered using the file import. The report "Registered Meters" was renamed to "Meters" since it shows all meters in the system with a column indicating whether it is registered or not. Added note about only being able to do 10,000 records per file.	CM	2017/02/13
2.1	The file format of the bulk meter key change file has changed so that it is easier for the user to create the bulk meter key change file	CA	2017/03/10
2.2	Added a note that the first line of the Bulk Meter Key Change file should be the headers. And a comma was missing from the CSV line	CM	2017/03/24

Version	Description	Person	Date
2.3	The 'toSgc' field was the same as the 'sgc' field in the example of a Bulk Key Change file. Added appendix B: Roles and permissions	CM	2017/04/03
2.4	References to "KMF" were changed to "KLF" in the UI, updated descriptions in this document to match	CM	2017/04/04
2.5	File for bulk meter import must include columns for Organisation and Name. Supply group code must also start with a '#'.	SS	2017/04/26
3.0	Added Maintenance section which describes the recommended backup and restore procedure	CA	2017/06/08
3.1	Documented STS Section describing procedures on how to do each sub section	PS	2018/06/06
3.2	Added section 6.2 Changing the TLS port	CA	2018/06/10
3.3	Corrected numbering and formatting issues. Removed crypto support email. Changed Zazoo to Prism Payment Technologies where applicable.	PS	2018/06/27
3.4	Added section 4.3.2.1 on how to customise the Quick Vend buttons Added section 6.3 Configuring Remote Access – Best Practices	CA	2018/07/09
3.5	Added Section on Bulk Engineering Token Generation	CA	2020/07/17
3.6	Clarified vendingHigh and vendingLow preference explanation. The values set are currency amounts after fee deduction	CA	2020/08/12
3.7	Updated the reports section with the two new Web API reports	CA	2021/12/21
3.8	Added section on tariff rounding modes	TD	2022/11/08

