

**Oracle® Hospitality Cruise Shipboard
Property Management System**

Norwegian Tax Handling

Release 8.0

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Preface

This document describes the Norwegian Fiscal Enhancement introduced in Oracle Hospitality Cruise Shipboard Property Management System (SPMS). The product offered to Norwegian market must comply with both the:

- Norwegian Tax Authority's Cash Register Systems Act (CSRA), and
- Norwegian Tax Authority's Cash Register Systems Regulation (CRSR).

The aim is to combat the black market, especially in sectors involving cash sales. With SPMS Norwegian Fiscal Enhancements, it will be more difficult to manipulate the cash register system, and evade tax and duties.

Audience

This document is intended for project managers, application specialist and users of Oracle Hospitality Cruise Shipboard Property Management System.

Customer Support

To contact Oracle Customer Support, access My Oracle Support at the following URL:

<https://support.oracle.com>

When contacting Customer Support, please provide the following:

- Product version and program/module name
- Functional and technical description of the problem (include business impact)
- Detailed step-by-step instructions to re-create
- Exact error message received and any associated log files
- Screen shots of each step you take

Documentation

Oracle Hospitality product documentation is available on the Oracle Help Center at <http://docs.oracle.com/en/industries/hospitality/>

Revision History

Date	Description of Change
January 2019	<ul style="list-style-type: none">• Initial publication

1 Prerequisite

Before you begin using the Norwegian Fiscal Enhancements, a Digital Certificate must be installed. If the digital certificate is not present, the system will not allow you to perform any postings or payment. See section [Key Pair Management for Digital Signature](#) for more details on how to apply Digital Certificate.

In order to comply with the Norwegian Tax Authority requirements, you are required to disable the financial functions of the SMART iCrew. The table below list the user security privileges to be disabled.

XUSP_ID	Description
11106	Cabin change in iCrew
11641	Add payment in iCrew
11642	Add posting in iCrew
11643	Print invoice in iCrew
51011	Book shore excursion in iCrew

2 System Parameters

A new general parameter was introduced for the Norwegian Fiscal Enhancements. This general parameter serves as a switch that enable/disable the changes/features introduced by Norwegian Fiscal Enhancements. It also ensures that the changes introduced does not affect existing SPMS operations that do not require Norwegian Fiscal Enhancements.

The parameter mentioned below is inserted by running the Database Installer for release 8.0.8 and above. In order to enable this feature, login to **Administration module, System Setup, Parameter, 'General'** group.

Table 2-1 - Parameter Group: GENERAL

PAR Name	PAR Value	Description
Use Norwegian Fiscal Requirements	1	1 – Turn ON the Norwegian Fiscal Requirements Changes. 0 – Turn OFF the Norwegian Fiscal Requirements Changes.
Norwegian Tax Audit Report Path	C:\Users\Public\Documents\ Oracle Hospitality Cruise\	Default path to store report output file.

When you enable the Norwegian Fiscal Enhancements general parameter, the application shall prompt the following.

By enabling the parameter "Use Norwegian Fiscal Requirements", you agree that the Financial functions (Postings, Payments and Printing of Invoices) in iCrew application will be disabled for ALL users permanently. Disabling this parameter is no longer permitted.

By clicking on the **Agree** button, you consented to the agreement displayed. This action will then be recorded in the SPMS database.

Once enabled, SPMS would not allow the Norwegian Fiscal Enhancements to be disabled. If you attempt to disable the "Use Norwegian Fiscal Requirements" parameter from the **Administration** module, the application prompt **"You are not allowed to disable the General parameter "Use Norwegian Fiscal Requirements" after you have agreed to turn it ON!"**

3 System Configurations

Listed below are the changes introduced for the Norwegian Fiscal Enhancements in order to meet the requirements specified by the Norwegian Tax Authority.

Configure Company Details

In order for the company information to be shown on the report, the Company entities must be setup.

Login to Administration module and select **Administration, System Setup** then **Company Entities Setup** on top menu, then configure the value for two new entities per below.

- **Organization number:** Organization number from Register Centre or other relevant government authority.
- **VAT registration number:** The company's VAT number. This is the unique number from Register Centre

The screenshot shows the 'Company Entities Setup' dialog box. On the left is a tree view with three items: 'DEZ Miljø', 'DEM Miljø', and 'DEV Miljø'. The main area is titled 'Entity Details' and contains the following fields:

- Entity ID: 186000000118
- Code: DEV
- Name: Demo
- Enabled: True (dropdown)
- FC ID: 186-118
- Record ID: 17
- Type: 1 - Vessel (dropdown)
- Address: (empty text area)
- City & Country Code: (empty text field)
- Phone: (empty text field)
- Fax: (empty text field)
- Email: (empty text field)
- Print Order Report ID: 0
- License: (empty text field)
- IDEA Enabled: False (dropdown)
- Organization number: TESTING123 (highlighted with a green box)
- VAT registration number: VAT123 (highlighted with a green box)

At the bottom right are three buttons: OK, Cancel, and Apply.

Printer Configuration

In order to print the required receipts such as Sales Receipt, Delivery Receipt and Return Receipts, a printer setup is needed.

1. Login to **Management module, Options**, and then select the **Hardware** menu.
2. Select **Report Printers** as **Receipts** and choose the printer from the drop-down list.
3. Click **Apply** to save and exit the configuration screen.

Predefined Code Mapping

In Norwegian E-Journal Report, it is necessary to display standard predefined code instead of a system code. For example, standard predefined code for VAT rate and main department, therefore code mapping between standard predefined code and system code is required. The **Predefined Code Mapping** button is enabled when the **PAR Use Norwegian Fiscal Requirements** is enabled, and user has the authorization to access this function.

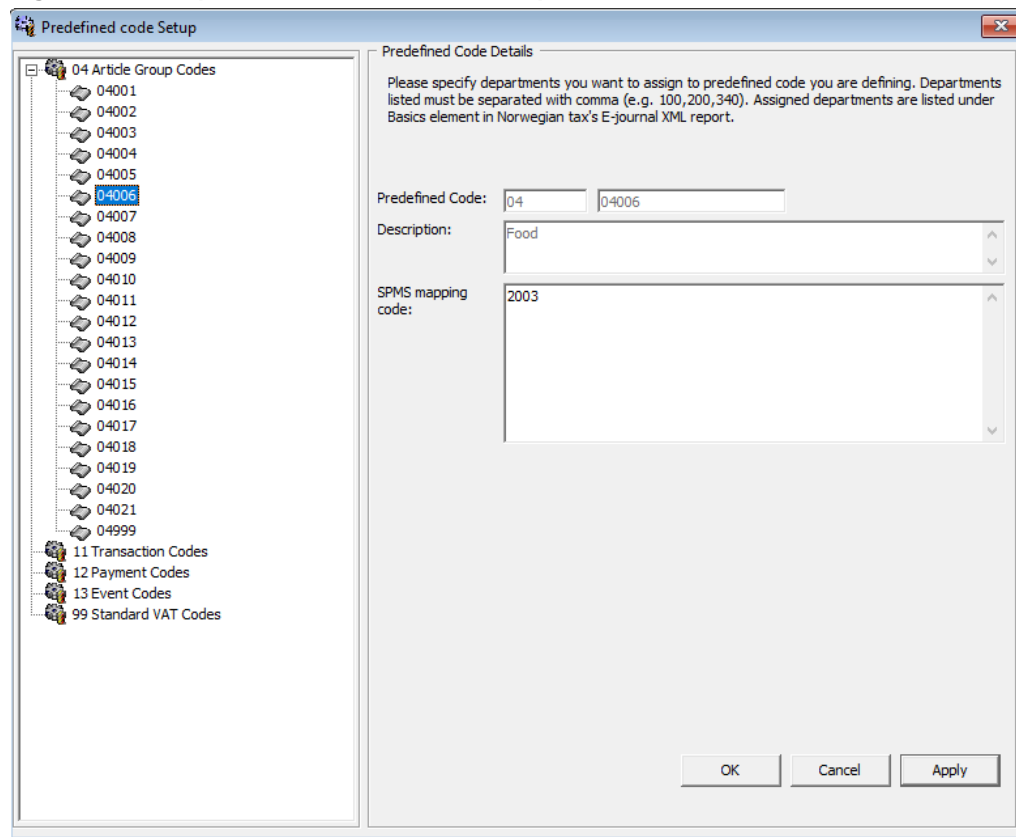
To map the standard predefined code with system code, login to Administration module and click on button **Administration, System Codes**, then **Predefined Code Mapping** at the top menu.

Standard Predefined Code 04 – Article Group/Department Codes

This code is used to configure the system debit department code. In below screen example, the system debit department code 2003 for food is mapped to standard predefined code 04 and predefined ID 04006.

In report, this standard predefined code is displayed in <basicType> and <predefinedBasicID> under <basics> element.

Figure 3-1 - Sample of Predefined Article Group



Standard Predefined Code 11 – Transaction Codes

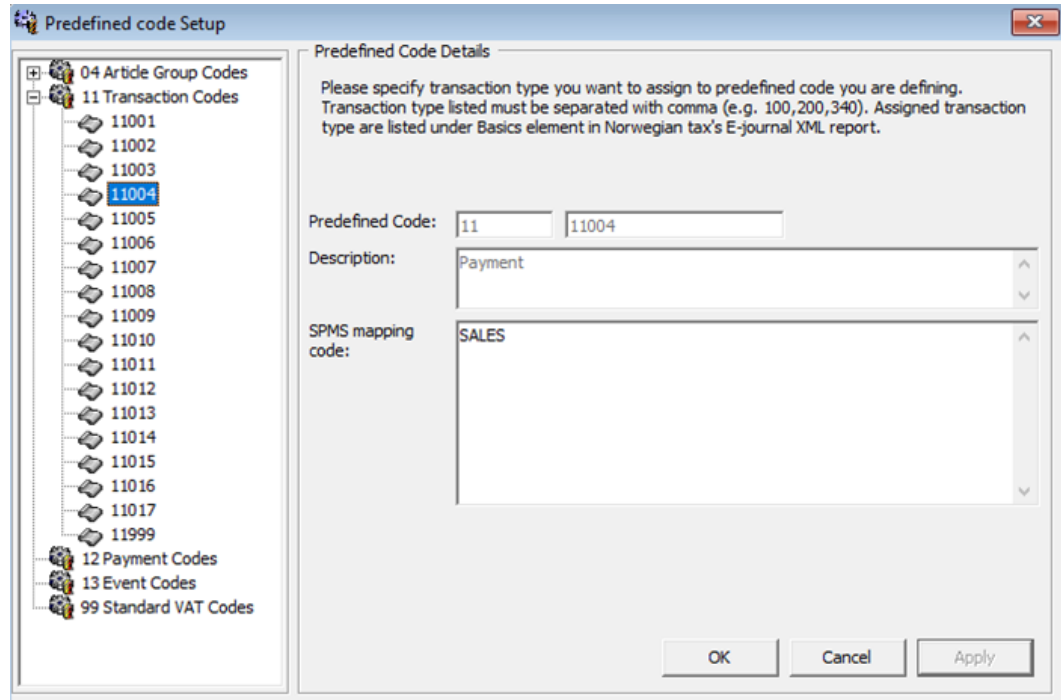
This code is used to configure system transaction code. In below screen, payment transaction code **SALES** is mapped to standard predefined code 11 and predefined ID 11004.

There are two categories of transaction code in the system:

1. Transaction code for Point-of-Sales (POS) record. In report, it is displayed in <lineType> under <ctLine> element.
There are five types of transaction code for POS record. You **must** follow the exact system transaction code per below and configure into user interface to avoid unmapped data and incorrect information being displayed.
 - POST (add posting)
 - SALES (payment)
 - REFUND (return payment)
 - DIS (discount)
 - VOID (void posting)
2. Transaction code for receipt type. In report, it is displayed in <transType> under <cashtransaction> element.
There are four types of transaction code for receipt type. You must follow the exact system transaction code below to configure into user interface.
 - SALES (Sales Receipt)

- RETURN (Return Receipt)
- PROFORMA (Pro Forma Receipt)
- DELIVERY (Delivery Receipt)

Figure 3-2 – Sample of Predefined Transaction Codes

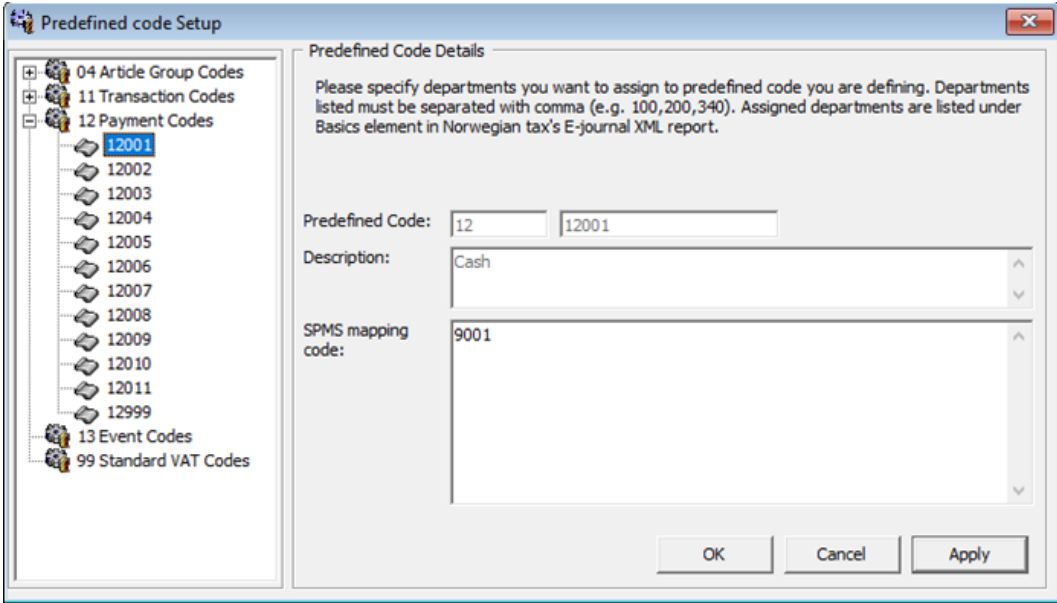


Standard Predefined Code 12 – Payment Codes

This code is used to configure system credit department code or payment code. In below example, the credit department code 9001 for cash is mapped to standard predefined code 12 and predefined ID 12001.

In report, it is displayed in <basicType> and <predefinedBasicID> under <basics> element.

Figure 3-3 - Sample Predefined Payment Codes

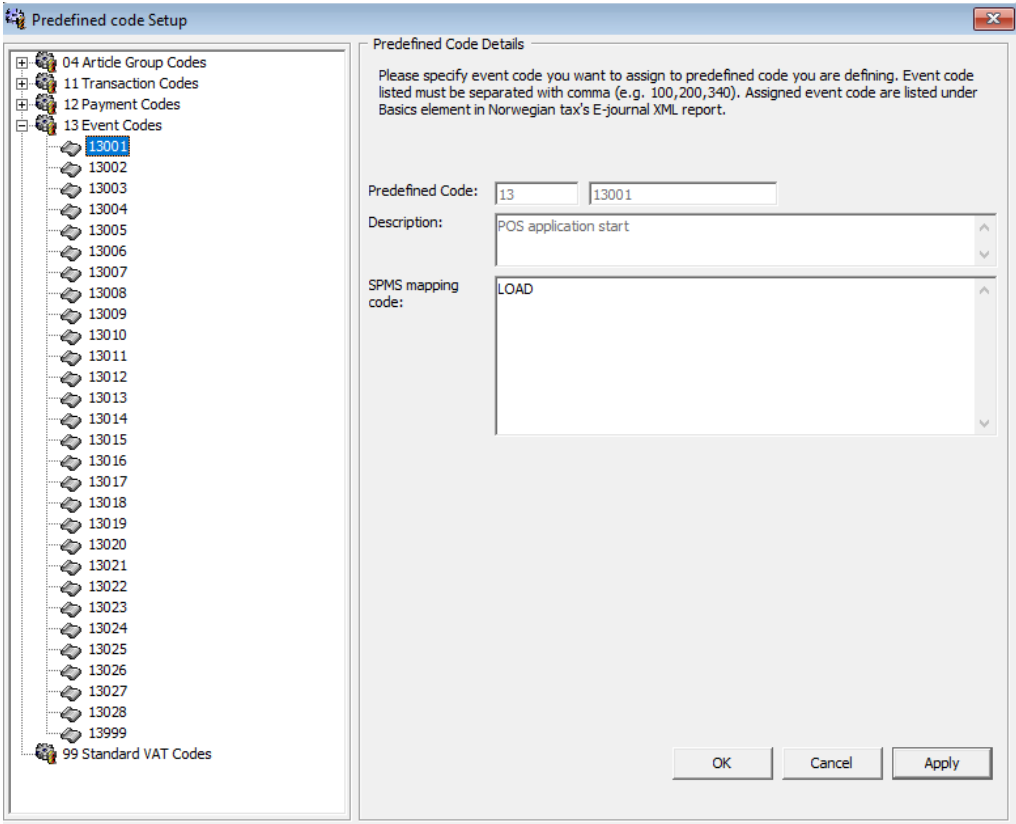


Standard Predefined Code 13 – Event Codes

This code is used to configure system event code. In below example, the system event code **LOAD** for application starting is mapped to standard predefined code 13 and predefined ID 13001.

In report, it is displayed in <event> under <cashregister> element.

Figure 3-4 - Sample Predefined Event Code

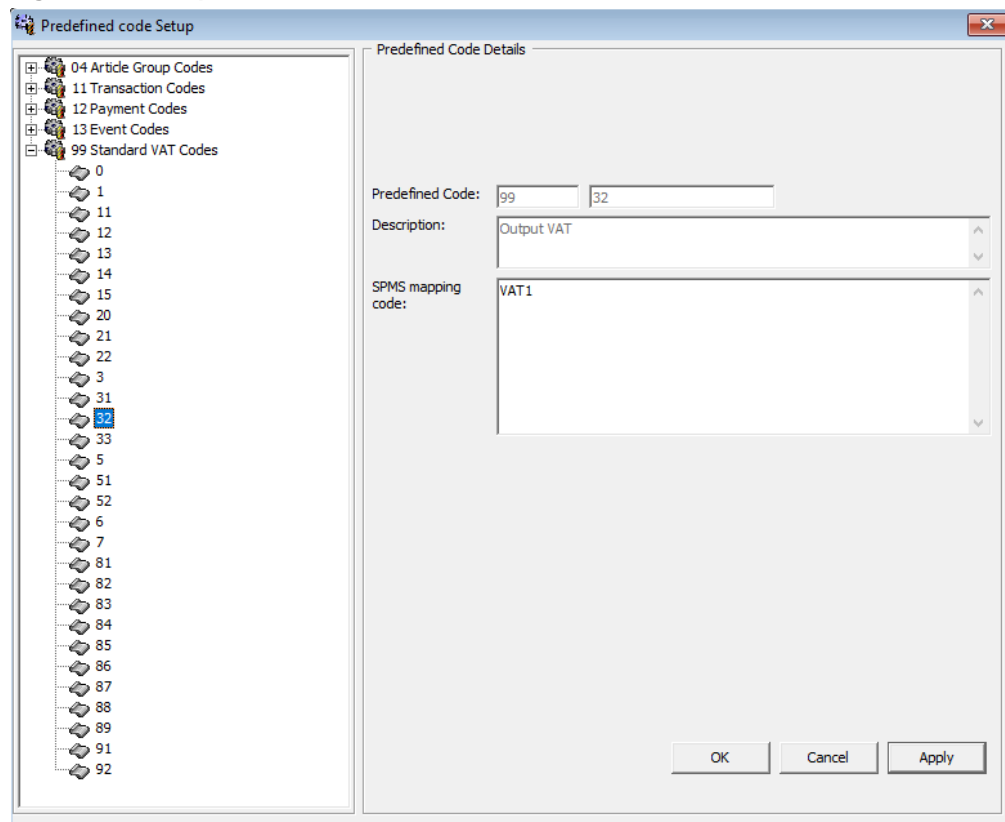


Standard Predefined Code 99 – Standard VAT Codes

This code is used to configure system VAT code. In below example, the system VAT code VAT1 is mapped to standard predefined code 99 and predefined ID 32.

In report, it is displayed in <standardVatCode> under <vatCodeDetails> element.

Figure 3-5 - Sample Predefined VAT Code



Key Pair Management for Digital Signature

Norwegian Tax Authority mandates that sales transactions MUST be digitally signed. Norwegian Tax Authority has chosen the cryptographic function: RSA-SHA1-1024. It is based on the asymmetric encryption where a key pair of private key and public key is required.

To perform key management, the key pair can be self-generated and self-signed. This means that the key pair can be generated from ANY machine and anywhere. The public key submitted to the Norwegian Tax Authority signifies the valid key pair recognized by the Norwegian Tax Authority. For each Cruise Operator, one key pair is sufficient regardless of the number of the Sales Registers used. Cruise Operator shall be FULLY responsible for the generation and management of the key pairs.

For Norwegian Tax Authority audit purpose, the Cruise Operator is responsible in submitting the key pair of the public key used in digital signing. When the key expires or is breached, the Cruise Operator must re-generate a new key pair and update the new key pair in SPMS. The new public key shall be resubmitted to the Norwegian Tax Authority.

Please refer to appendix for [Digital Certificate Format Requirements](#).

Creating Self-signed Certificate

Listed below are the few tools used to generate a self-signed certificate.

1. Using the OpenSSL libraries.
2. Using the MakeCert.exe tool distributed in the Windows SDK.
3. Using the PowerShell pkiclient cmdlet.

OpenSSL

This is the recommended method if you work on multiple platforms (Linux, Mac, Windows, etc.). OpenSSL can be installed on most of the OSs.

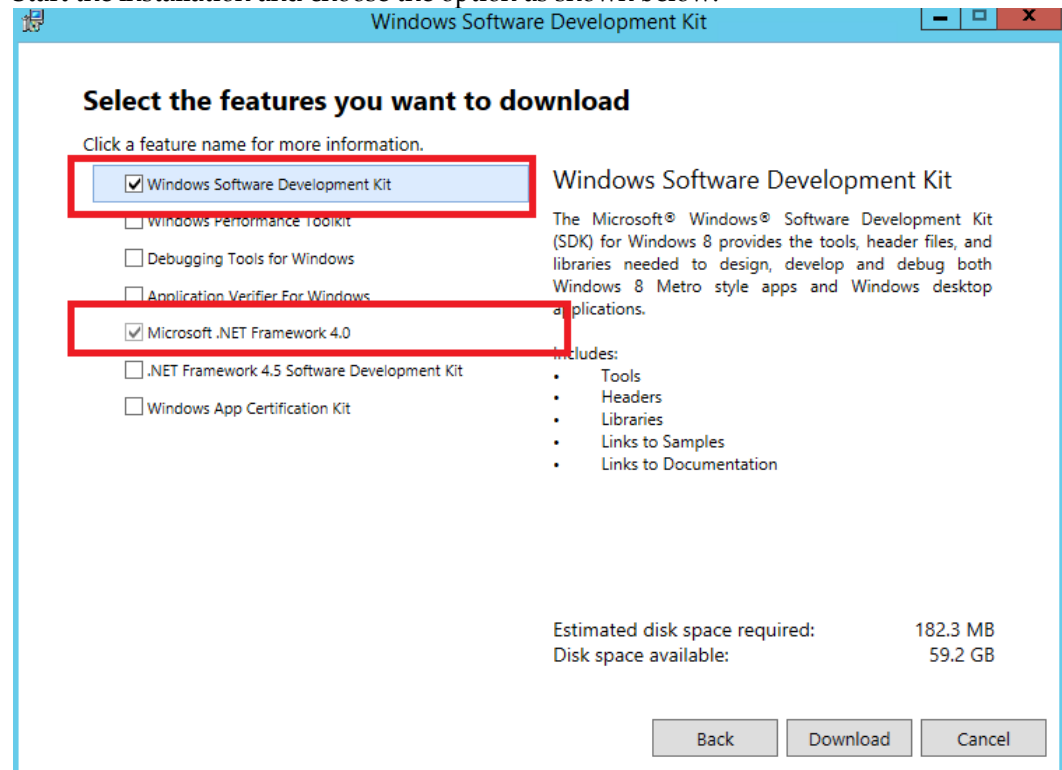
Download and install the OpenSSL toolkit from: <https://www.openssl.org/>

MakeCert

This method is recommended if the target machine is Windows 8 and Windows Server 2012. Download and install the Windows 8 SDK from:

<https://developer.microsoft.com/en-us/windows/downloads/sdk-archive>

Start the installation and choose the option as shown below.



This example creates a self-signed certificate for the purpose of digital signing and that would be stored in the Windows Certificate Store "cert:\LocalMachine\My". Right-click the **Command** prompt and select to run in **Administrator mode**, and then execute the command below.

```
cd "C:\Program Files (x86)\Windows Kits\8.0\bin\x86"  
MakeCert -a sha1 -len 1024 -n "CN=Cruise Digital Signature" -pe -r  
-sky Signature -sr LocalMachine -ss My
```

This will generate a new key pair for RSA-SHA1-1024 cryptographic function with the certificate subject being set as "Cruise Digital Signature".

- The "-pe" option allows the private key to be exportable. You will need this as the key pair will be used by each Sales Register.
- The "-r" option creates a self-signed certificate.
- The "-sky Signature" option indicates that this key pair is meant for digital signing.
- The "-sr LocalMachine" option will tell Windows to store the key pair under the `HKEY_LOCAL_MACHINE` registry location certificate store.
- The "-ss My" option is the name of the certificate store that stores the generated certificate that contains the key pair.

PowerShell New-SelfSignedCertificate cmdlet

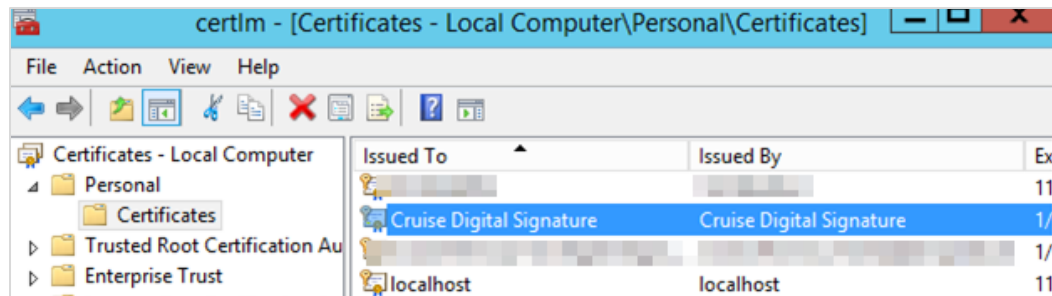
This method is recommended if the target machine is Windows 10 and Windows Server 2016. The function and storage of the certificate for this tool is similar to MakeCert. Right-click the **PowerShell** prompt and select to run in **Administrator** mode, and then execute the command below.

```
New-SelfSignedCertificate -CertStoreLocation  
"cert:\LocalMachine\My" -Subject "Cruise Digital Signature" -  
HashAlgorithm SHA1 -KeyAlgorithm RSA -KeyLength 1024 -  
KeyExportPolicy Exportable -KeySpec Signature -KeyUsage CertSign  
-Type CodeSigningCert -NotAfter $('[datetime]::now.AddYears(5)')
```

Export Self-signed Certificate

After the generation of the digital signing certificate, you will need to distribute the certificate to whichever machine that performs digital signing task. As the certificate contains private key, you will need to provide a password to secure the file once the certificate is exported to the local file system. Here onwards, you are responsible in safeguarding the certificate along with the password used to lock it. The steps below will guide you on how to export the digital signing certificate to a password secured PFX file.

1. At the **Search Windows** prompt, type in **Manage computer certificates** to open the "certlm" console.
2. At the tree view list on the left panel, under "**Certificates - Local Computer**", expand the **Personal** folder and then click the **Certificates** folder.
3. Click the **Certificates** folder and look for the certificate issued to "Cruise Digital Signature" on the right panel.



4. Double-click to open the certificate and ensure it contain the private key. You should see the golden key icon with message "You have a private key that corresponds to this certificate" under **General** tab.
5. On the certificate, right-click on the right panel, and you shall see a prompt.
6. Choose **All Tasks**, then **Export** to start the Certificate Export Wizard.



7. Click **Next** button to continue.
8. At the Export Private Key screen, check the **Yes, export the private key** radio button option and then, click the **Next** button.
9. Key in a password to secure the PFX certificate to prevent any user from opening the certificate. It is the Cruise Operator's responsibility to remember the password used!
10. Choose the location of the file to export and the click **Next** button again.
11. Click the **Finish** button and now, you should have the PFX certificate located in the export location selected.

Import the Key Pair

Before you import the key pair, ensure that you have a PFX certificate available on the machine and the password of the certificate. Follow the steps below to import

1. Repeat steps 1 to 2 of Export Self-signed Certificate.
2. Right-click on the Certificate folder and select **All Tasks**, then **Import...** to start the Certificate Import Wizard.

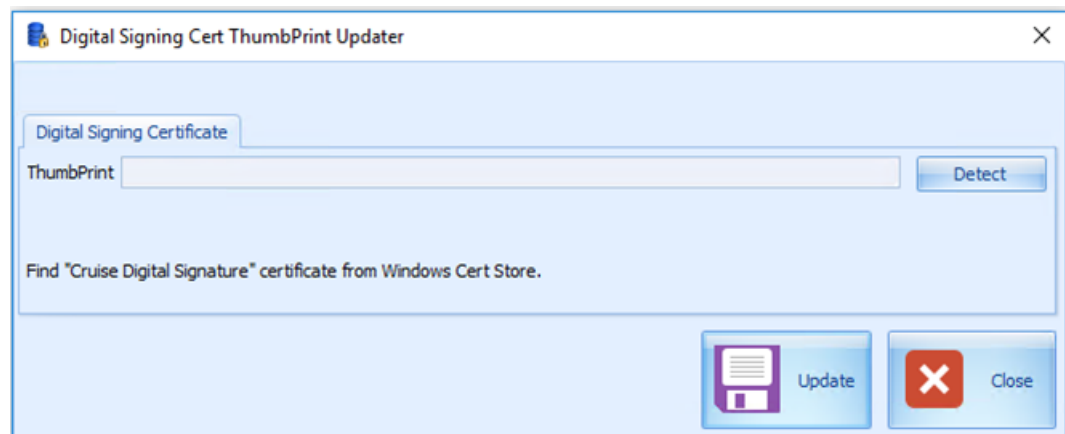
3. Click the **Next** button to continue.
4. At the File to Import screen, browse the location of the PFX file to import and then click the **Next** button again.
5. Key in the password to unlock the PFX certificate. Do not select the "**Mark this key as exportable.**" option in order to ensure maximum confidentiality.
6. Click the **Next** button and then click the **Finish** button. Now, you should have the key pair saved in the Windows certificate store.

Managing the Key Version in SPMS

Although the key pair is stored in the Windows certificate store, SPMS will need to manage the key version. Every new key pair used in SPMS will be recorded in the KEY table of the SPMS schema.

1. Login to the **Tools** module, then click the **Update Cert ThumbPrint** at the ribbon bar.
2. At the Digital Signing Certificate window, click **Detect** for the program to look for the certificate name 'Cruise Digital Signature' and obtain the ThumbPrint of the public key.

Figure 3-6 - Digital Signing Cert Thumbprint Updater



3. Click **Update** to store the key into the KEY table.

Export the Public Key

Norwegian Tax Authority requires the public key in order to audit the digitally signed sales transactions. As a requirement, Cruise Operator **MUST** be able to provide the public key in the form of base64 encoded X.509 certificate.

1. Repeat steps 1 to 7 of Export Self-signed Certificate.
2. Select the "No, do not export the private key" radio button option and then, click the **Next** button.
3. Select the "**Base-64 encoded X.509 (.CER)**" radio button option and then, click the **Next** button.
4. Choose the location of the file to export and then click **Next** button again.

-
5. Click the **Finish** button and now, you should have the CER certificate located in the export location selected.

With the base64 encoded CER certificate, you can now submit the public key to the Norwegian Tax Authority.

4 IIS Configurations

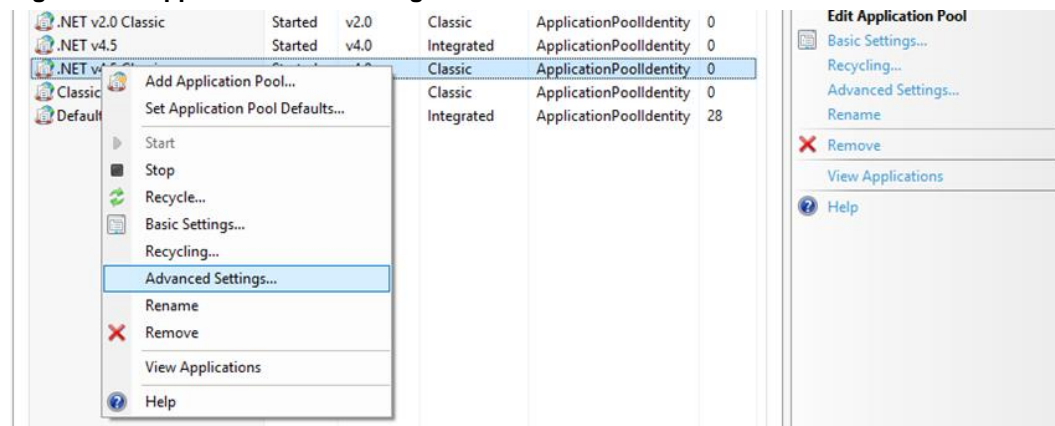
Listed below are the changes introduced for the Norwegian Fiscal Enhancements in order to meet the requirements specified by the Norwegian Tax Authority.

Configure Web Service Run Privilege

The SPMS web services (OHC WebServices or OHC TransactionsService) by default are configured to run with ApplicationPoolIdentity. The default run privilege is restricted and will not be able to retrieve the Digital Signing certificate stored in the Windows Certificate Store when digital signing is required. Therefore, it is important to note that when Norwegian Fiscal Enhancements feature is enabled, the cruise IT personnel is required to change the web service run privilege. Follow the steps below.

1. Open the **IIS Manager**.
2. Select the web services (OHC WebServices or OHC TransactionsService) from the application pool. Right-click and select **Advanced Settings...** option.

Figure 4-1 - Application Pool Settings



3. Under **Process Model** group, select **Identity** option.

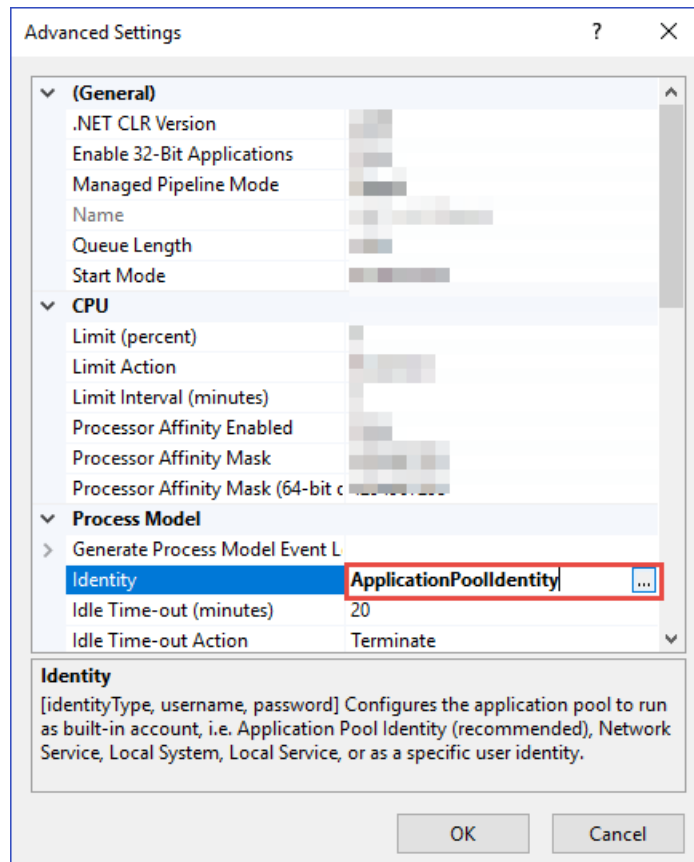
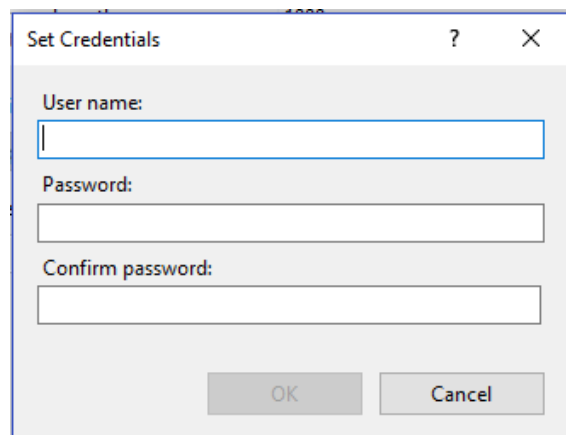


Figure 4-2 - Application Pool Advanced Settings

4. At the Application Pool Identify form, change the Windows user access by selecting **Custom Account** and click **Set**.
5. At the Set Credentials form, enter the **User Name**, **Password** and **Confirm Password** when prompt.



6. Click **OK** to save and exit.

5 Receipt Printing

Norwegian Tax handling enforces all the receipts (Delivery Receipt, Sales Receipt, and Return Receipt) to be printed and electronically signed, except for the Pro Forma Receipt. The receipt layout uses a standard SPMS Invoice Report with additional requirements for each receipt type.

Please refer appendix [Receipt Layout Modification](#) for the lists of all mandatory elements that needs to be presented on all the 4 types of receipt.

Delivery Receipt

Delivery Receipt in terms of this regulation is a print-out from the cash register system for transactions which are not yet closed but charged to the on-board account. In other words when a Guest acquires a credit or charge a posting to the cabin.

The business logic behind the POST functionality forces a Delivery receipt to be printed on each cabin charge posting. When performing a cabin charge posting, only the **POST & PRINT** button is available.

The following table lists the areas applicable to perform posting and print Delivery receipt.

Module	Function
Management, Crew	<ul style="list-style-type: none">• Guest/ System Account/ Group/ Gift Card handling, Add Posting• Crew handling, Add Posting• Quick Posting
Business Center	<ul style="list-style-type: none">• Internet Postings
Advanced Quick Check In	<ul style="list-style-type: none">• Ferry operation: Package posting when create new reservation• Change Schedule• Change Cabin
Casino	<ul style="list-style-type: none">• Post
Currency Exchange	<ul style="list-style-type: none">• Post to Account
Kiosk	<ul style="list-style-type: none">• Book an Excursion• Book an Event• Internet Posting
Medical	<ul style="list-style-type: none">• Add Posting
Shore Excursion	<ul style="list-style-type: none">• Booking• Move Booking

Module	Function
	<ul style="list-style-type: none"> • Post Unposted Booking • Package Postings
Universal Interface	<ul style="list-style-type: none"> • BookingMsg • PostingMsg • BookExcPack
Web Service	<ul style="list-style-type: none"> • FCUI Posting
Ticket	<ul style="list-style-type: none"> • Event Booking • Move Booking
SPA	<ul style="list-style-type: none"> • Post

Sales Receipt

Sales Receipt in terms of this regulation is a print-out from the cash register system for transactions completed. In other words when a Guest perform payment by cash, credit or other payment methods.

All business logic behind the PAY functionality forces a Sales receipt to be printed when invoice payment is made. Only the **PAY & PRINT** button is available when performing payment / invoice balance.

The following table lists the areas applicable to perform invoice payment and print Sales receipt.

Module	Function
Management, Crew	<ul style="list-style-type: none"> • Guest/ System Account/ Group/ Gift Card handling, Pay Invoice • Crew handling, Pay Invoice • Guest/ System Account/ Group/ Resident Quick Billing • Pay by Credit Card / Pay Direct Sales
Advanced Quick Check In	<ul style="list-style-type: none"> • Ferry operation – create new reservation: Pay by Credit Card • Change Schedule - Pay by Credit Card • Change Cabin - Pay by Credit Card
Universal Interface	<ul style="list-style-type: none"> • PaymentMsg
Web Service	<ul style="list-style-type: none"> • FCUI Payment
Shore Excursion	<ul style="list-style-type: none"> • Booking - Pay by Credit Card • Quick Booking – Pay by Credit Card

Return Receipts

Return receipt is a print-out from the cash register system which states that a previously printed Sales receipt contains incorrect information or information about repayment for repriced or returned goods or services. In other word, it is void payment.

Return receipts have to be separately marked. They are not required to be printed but still can be.

The following table lists the areas applicable to perform void payment and print Return receipt.

Module	Function
Management, Crew	Guest/ System Account/ Group/ Gift Card handling, 'VOID' button Crew Handling, 'VOID' button
Currency Exchange	Exchange Overview, 'Void' button
Casino	Cashier, 'Void Posting' button
Medical	Search Posting, 'Void Transaction' button
Excursion	Handling Lists, 'Void Tour Booking' button
Tickets	Account Handling, 'Void Booking' button
SPA	'Void Posting' button

Pro Forma Receipts

Pro forma in terms of this regulation is a print-out from the cash register system which shows provisionally registered sales. In other words, it is a Information Invoice.

From SPMS modules perspective, all information invoices generated using following menu options are:

Module	Function
Management, Crew	Guest/ System Account/ Group/ Gift Card handling, 'PRINT INVOICE' button Crew Handling, 'PRINT INVOICE' button Guest/ System Account/ Group/ Resident Quick Billing, 'PRINT' button Crew Quick Billing, 'PRINT' button

6 Norwegian E-Journal Report

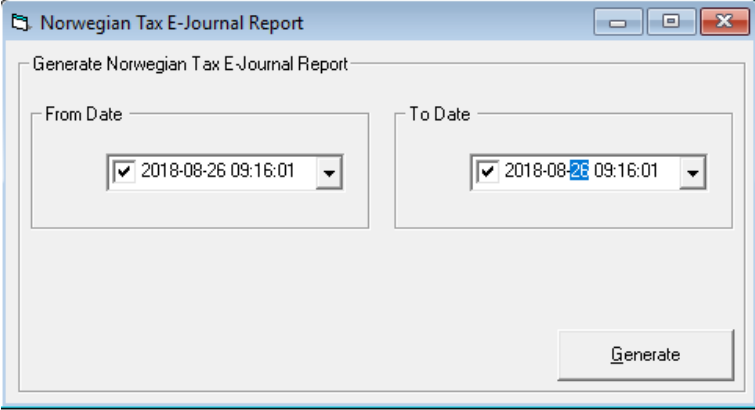
The Norwegian Electronic Journal report is the electronic documentation of the continuous use of the cash register system. The continuous use here refers to all use of the cash register system including registration of sales, printing of receipts like Sales, Return, Pro-forma and Delivery Receipts, change of prices, printing of reports X & Z.

The Electronic Journal is protected against alteration and deletion, and are transferable to another electronic medium using a file format that cannot be readily edited.

1. Login to **Management module**.
2. Select **Cashier** from the menu and then **Norwegian Tax E-Journal Report**. This menu is enabled only when the parameter 'Use Norwegian Fiscal Requirement' is enabled and you are authorized to generate the report.
3. At the Norwegian Tax E-Journal Report screen, select the date range from the date editor.
4. Click **Generate** to create the export into XML file, based on the path configured in the parameter.

Note: The receipts can only be exported once. Records that has been exported will not exist in the following report.

Figure 6-1 - Generating Norwegian Tax E-Journal



The screenshot shows a software window titled "Norwegian Tax E-Journal Report". Inside the window, there is a section titled "Generate Norwegian Tax E-Journal Report". This section contains two date pickers: "From Date" and "To Date". Both date pickers are set to "2018-08-26 09:16:01". At the bottom right of the window, there is a button labeled "Generate".

Below is the output filename and format:

```
<SAF-T export type>_<organization number of the vendor who the data represents>_<date and time (yyyymmddhh24hmise)>_<file number/follow period number in report>.xml
```

For example: **SAF-T Cash Register_A1234567_20180901150823_3.xml**

Please refer to Appendix for [E-Journal Report](#) structure.

7 Fiscal Report

The cash register system must be able to generate a X and Z Reports per Point of Sale. By definition, the Z report is a daily summary of the registrations in the cash register and X report is a summary of registrations in the cash register since the last Z report.

It is required that Z report is produced, not necessary printed for each Cash Register and it must be described how to get it printed on demand. Producing Z Report may be therefore connected with change of business (system) date in general and both of these report is required to print on demand.

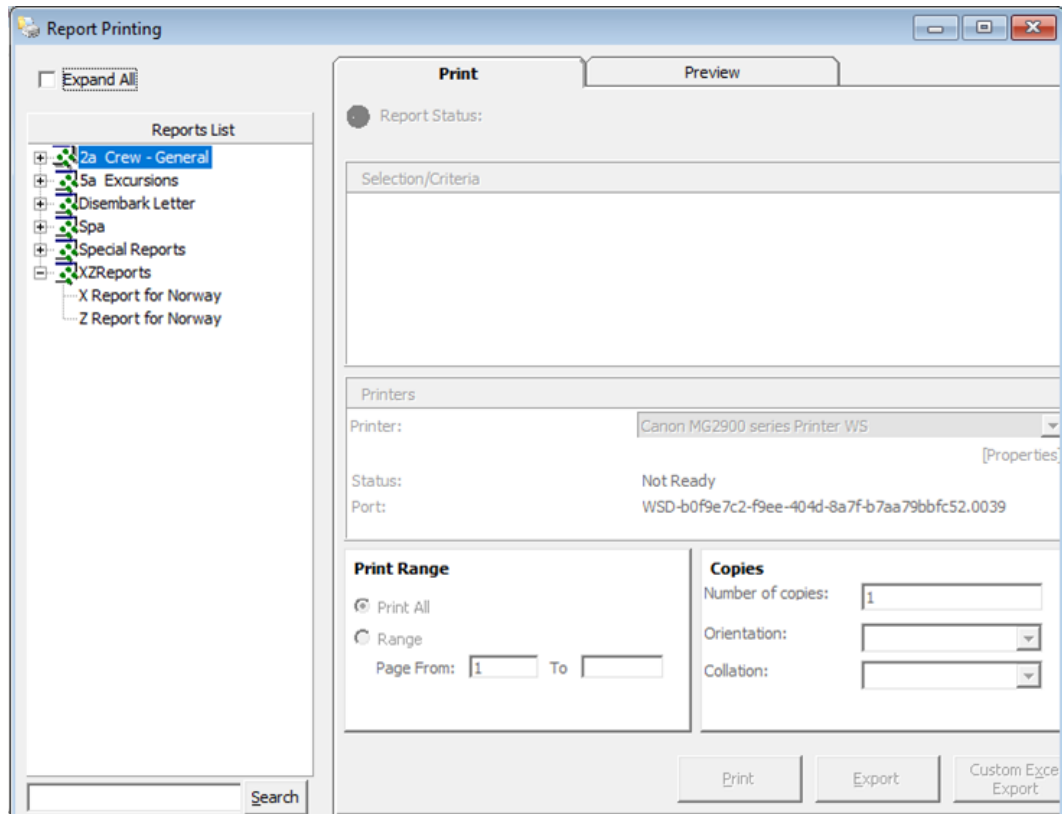
The X and Z reports should be printed / displayed on any Cash Register. It should be possible to run / print Z Report by a scheduled job and/or manually.

It is important that running / printing of X and Z Reports should be written into Electronic Journal.

The X and Z report are generated from **Administration, Reports, Reports** module.

For X and Z Report Structure, see section [X and Z report Structure](#).

Figure 7-1 - Report Printing Function



Receipt Layout Modification

Norwegian Tax Authority requires that the receipts contains the following information.

Sales Receipt Requirements

Mandatory Element of the Sales Receipt	Comments
Document Number and Date	Consecutive number of document (Sales Receipt) and date of the document
Parties involved	Information about document (Sales Receipt) Issuer and Receiver. Issuer data must contain: the name, address, and organization number (from The Brønnøysund Register Centre (Brønnøysundregistrene) of the enterprise. If the issuer is registered with the VAT Register, organization name shall follow the following convention: the letters "MVA"+registration number. Receiver data must contain identification data.
Date and place of delivery	When and where services were delivered
Sale nature and scope	Services which have been delivered
Specification of taxable and tax-free sales	Taxable and tax-free sales and the sale exempted from VAT shall be listed separately and added separately. The same applies if taxable turnover tax is calculated at different rates.

Mandatory Element of the Sales Receipt	Comments
Identification of Cash Register	<p>The ID number of the Cash Register System (UWID). It must be a unique identifier that represents the PC Workstation that prints the receipt, it must be not changeable and preferable a combination of letters and numbers. It must be unique on each business location (ship) and within the company's organization (fleet). It must also be unique in case of Workstation replacement.</p> <p>(suggestion UWID -> XCET_FC_ID + WORKSTATION ID)</p>
Indication that document is a Sales receipt (Salskvittering)	<p>Word 'Salskvittering' must appear at the top of the receipt and be twice as big "change due" entry on the receipt.</p> <p>It is not permitted to replace upper case with lower case letters.</p> <p>The font of the text must be at least 50% larger than the text that shows the amounts.</p>
Indication that Sales receipt is in electronic form (Elektronisk Salskvittering)	<p>If the sales receipt is produced in electronic form, the words "Elektronisk salskvittering" (Electronic sales receipt) must be displayed.</p>
Digital Signature	<p>Each receipt must be electronically signed. The signature shall sign specific data from each receipt and be recorded in the Electronic Journal upon finalization of each transaction. Electronic signature of the Sales Receipt must not be printed but it must be stored in Electronic Journal.</p>

Return Receipt Requirements

Layout similar to Sales Receipt except for:

Mandatory Element on the Return Receipt	Comments
Indication that document is a Return Sales receipt (Returkvittering)	<p>Word 'Returkvittering' must appear at the top of the receipt and be twice as big "change due" entry on the receipt.</p> <p>It is not permitted to replace upper case with lower case letters.</p> <p>The font of the text must be at least 50% larger than the text that shows the amounts.</p>

Pro Forma Receipt Requirements

Layout similar to Sales Receipt except for:

Mandatory Element on the Pro Forma Receipt	Comments
Indication that document is a Pro forma receipt (Foreløpig kvittering)	<p>Phrase 'Foreløpig kvittering – IKKE KVITTERING FOR KJØP' must appear at the top of the receipt and be twice as big "change due" entry on the receipt.</p> <p>It is not permitted to replace upper case with lower case letters.</p> <p>The font of the text must be at least 50% larger than the text that shows the amounts.</p>

Delivery Receipt Requirements

Layout similar to Sales Receipt except for:

Mandatory Element on the Delivery Receipt	Comments
Indication that document is a Delivery receipt (Utleveringskvittering)	<p>Phrase 'Utleveringskvittering – IKKJE KVITTERING FOR KJØP' must appear at the top of the receipt and be twice as big "change due" entry on the receipt.</p> <p>It is not permitted to replace upper case with lower case letters.</p> <p>The font of the text must be at least 50% larger than the text that shows the amounts.</p>

Digital Certificate Format Requirements

To implement digital signature cryptographic functions, a key pair of private key and public key is required. The key pair is stored in a digital certificate form. Norwegian Tax Authority requires that the digital certificate format to be as shown below.

Format	x.509
Charset	UTF-8
Encoding	Base-64
Endianness	Little Endian
OAEP Padding	PKCS1 v1.5 padding
Private key size	1024 bits
Hash Message Format	SHA-1

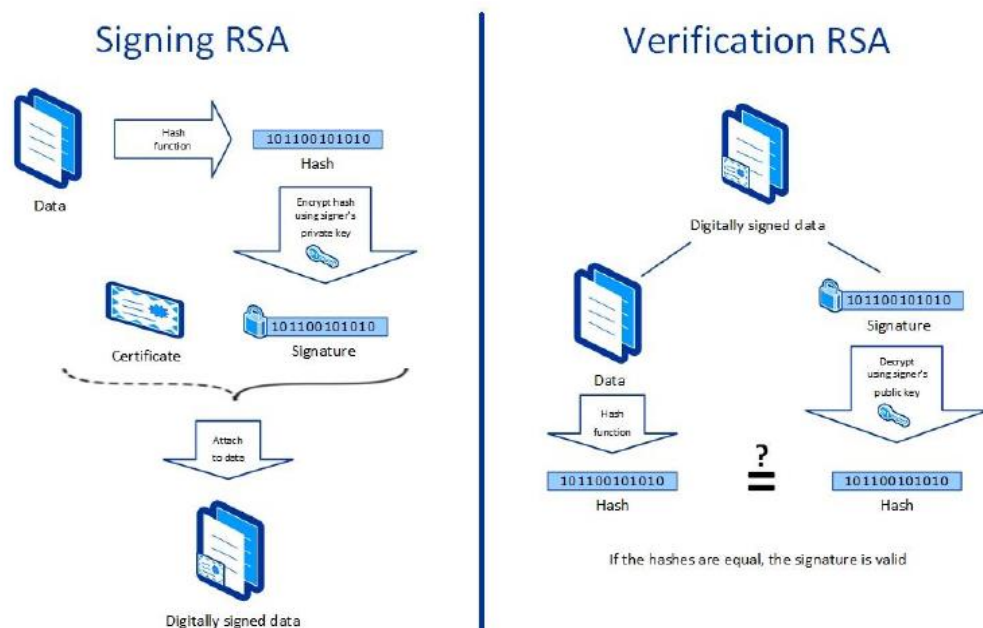
Digital Signature

Digital signature in our context here is the asymmetrically encrypted hash of the Transaction Data. Briefly, the digital signature is defined as:

<TransactionDataHash> = SHA-1(<TransactionData>)

<DigitalSignature> = RSA-1024(<TransactionDataHash >) using the Private Key

Signing and Verification Process



Examples:

Data to be signed:

signature_from_previous_receipt;2014-01-24;23:59:59;123456789;1250.00;1000.00

Hash data with SHA-1:

55abb153c38026540a601dd7bd4302e41481cd37

Encrypt the hash value with private key and generate signature:

signature_for_this_receipt

Verification of signature:

Generate hash with SHA-1 with same data as signed above:

55abb153c38026540a601dd7bd4302e41481cd37

Use public key on signature to get hash:

55abb153c38026540a601dd7bd4302e41481cd37

The hash values are the same and the data integrity is confirmed.

Digital Signature Trail

To preserve the integrity of the transactions, Norwegian Tax Authority mandates that the digital signing process should be chained. Shown below is the signature trail that SPMS should apply for its digital signing function.

- Cruise Line Company A
 - Ship AA
 - TransactionAA1
 - SignatureAA1
 - TransactionAA2
 - SignatureAA2 (from SignatureAA1)
 - TransactionAA3
 - SignatureAA3 (from SignatureAA2)
 - Ship AB
 - TransactionAB1
 - SignatureAB1
 - TransactionAB2
 - SignatureAB2 (from SignatureAB1)
 - TransactionAB3
 - SignatureAB3 (from SignatureAB2)
- Cruise Line Company B
 - Ship BA
 - TransactionBA1
 - SignatureBA1

- TransactionBA2
 - SignatureBA2 (from SignatureBA1)
- TransactionBA3
 - SignatureBA3 (from SignatureBA2)
- Ship BB
 - TransactionBB1
 - SignatureBB1
 - TransactionBB2
 - SignatureBB2 (from SignatureBB1)
 - TransactionBB3
 - SignatureBB3 (from SignatureBB2)

Verify Digital Signature

1. Get Transaction Data from e-journal xml file.

Element in SAF-T Cash Register	Description of element	Format and requirements	Examples
signature (previous)	Signature from previous receipt	Base-64 If no previous receipt the signature value must be set to "0" – number zero	signature_from_previous_receipt
transDate	Date at which the transaction was performed.	YYYY-MM-DD Do NOT use time zone or combined date and time format.	2014-01-24 2015-10-29
transTime	Time at which the transaction was performed.	hh:mm:ss Use ss=00 as default value if no information of seconds are available. Same as within the SAF-T export. Do NOT use time zone or combined date and time format.	23:59:59

Element in SAF-T Cash Register	Description of element	Format and requirements	Examples
nr	Transaction number. This must be a unique, sequential number within a journal. This will be the same as the number stated on the issued receipt	No leading or ending spaces.	123456789
transAmntIn	The amount involved in the transaction, including VAT.	Decimal Data Type: Numerical field with two decimals. Decimal separator "." (dot). No thousand separators. No leading or ending spaces.	1250.00 -1250.00 0.00
transAmntEx	The amount involved in the transaction, excluding VAT.	Decimal Data Type:	1000.00 -1000.00
signature (current)	Signature of current receipt	Base-64 If no previous receipt the signature value must be set to "0" – number zero	

2. Ensure that you have the public key in PEM format. You will need this to verify the signature.

EXAMPLE

Transaction data:

```
Q/IIJzrUadkb7LaV1wjOtUJ+8YIioE6ie7IX5gt7PCkhsWWAh3X+dU5AizWBNZ
hcuzX0gf/sSqYEBRYjERs+0FuPs7X33fS1Pm3Rzq2EuPOuA4x+1R8RymzhQntx
jCqM5eVNuRwmy7zXbft8ajH7eWL4vuoFUAsNIslVhBD/RPA=;2014-01-
24;23:59:59;123456789;1250.00;1000.00
```

Signature:

```
bPFEB2r/NSCAXjO/+F5aKhFyFFmoAYmi/tYBIOKMpoVdmr5S1qRkkyO0Ukmh6t
CI/cODTnYuAzHN5WcmfLcqAlwLohOKXrsJ+iClQEUFckGTyJWMXYROPU+4r1R
6jdLEPrL4FkcnFts7jiX2g/9CDh0yYZk96aojx+K2kdjV3o=
```

3. Save the transaction data in **message.txt** file.
4. Save the signature in **signature.txt** file.

5. Go to Windows search and type “**git bash**”. Start the command line tool.
6. Extract the public key from the certificate.


```
$ openssl x509 -pubkey -noout -in
NorwayTaxDigiSigning.cer > pubkey.pem
```
7. Now, decode the base64 encoded signature and store it in “sig1.txt” file.


```
$ cat signature.txt| base64 -d > sig1.txt
```
8. Finally, verify the signature.


```
$ openssl dgst -sha1 -verify pubkey.pem -signature sig1.txt
message.txt
```

E-Journal Report Structure

Report <header> Structure

Element	Descriptions
<fiscalYear>	Current year of From Date.
<startDate>	First day in current year of From Date.
<endDate>	Last day in current year of To Date.
<curCode>	Current currency code setup in SPMS.
<dateCreated>	Current database date.
<timeCreated>	Current database time.
<softwareDesc>	Current software to generate E-Journal report.
<softwareVersion>	Current software version.
<softwareCompanyName>	Current company setup in SPMS
<auditfileVersion>	The XML version number to be displayed in E-Journal Report.
<userID>	Login user who generates E-Journal Report.

Report <company> Structure

Element	Descriptions
<companyName>	Get from Name under Company Entities Setup in OHC Administration.
<taxRegIdent>	Get from VAT registration number under Company Entities Setup in OHC Administration.
<customersSuppliers>	Customer details. Only customer who exists in the receipt period being selected from user interface.

Element	Descriptions
<vatCodeDetails> <standardVatCode>	All VAT configuration details are using in SPMS. Standard VAT Code stated in norwegian-saf-t-standard-vat-codes.pdf. More details in section Standard Predefined Code 99 – Standard VAT Codes .
<periods> <periodNumber>	Period number of the defined period. Period number is generated by sequence CNT_EJOURNAL_RUNNO from database.
<employees>	Employee who generate receipt and trigger the event (refer to <event> node). Only employee who exists in the receipts period being selected from user interface.
<articles>	Department and main department details. Only department and main department that exist in the receipts period being selected from user interface.
<basics>	Main department ID for credit and debit department, and transaction code. With the mapping standard predefined code. Please refer to section Standard Predefined Code 04 – Article Group/Department Codes for more information.

Report <company><location><cashregister> Structure

<registerID>

Company ID in Company Entities Setup in OHC Administration, combine with my computer name.

<regDesc>

Name in Company Entities Setup in OHC Administration.

<event>

Log record from LOG table. Only records that exist in the date period being selected from user interface.

<cashtransaction>

One <cashtransaction> per one receipt. Only receipts that exist in the receipts period being selected from user interface.

 <nr>

 Receipt number.

 <transID>

 Receipt number.

 <transType>

 Receipt type:

- SALES

-
- RETURN
 - PROFORMA
 - DELIVERY

Refer to section [Standard Code 11 – Transaction Codes](#).

<transAmntIn>

Total receipt amount including VAT tax.

<TransAmntEx>

Total receipt amount excluding VAT tax.

<amntTp>

An increase in revenue (such as sales) is to be marked as C.

While a decrease in revenue (such as returns) is to be marked as D.

<empID>

User who generates receipt.

<custSupID>

Customer account number.

<periodNumber>

Refer to <periods> in above table.

<transDate>

Receipt creation date.

<transTime>

Receipt creation time.

<invoiceID>

Delivery receipt number.

<rounding>

Rounding to 2 decimal places.

<signature>

Digital signature of receipt.

<keyVersion>

The version of the private/secret key.

<voidTransaction>

True = Void transaction

False = No

<vat>

VAT details of all transactions within each receipt.

<payment>

Payment details of receipt.

<ctLine>

All transactions of the receipt. Record is retrieved from POS table.

<nr>

Receipt number. Link to root <nr>.

<lineID>

POS_ID of the POS record.

<lineType>

Transaction type of the POS record.

- POST
- SALES
- REFUND
- DIS
- VOID

Refer to section 2.4 [Standard Code 11 – Transaction Codes](#).

<artGroupID>

Main department ID of the POS record.

<artID>

Department ID of the POS record.

<qnt>

Quantity of the POS record.

<lineAmntIn>

Amount of the POS record including VAT tax.

<lineAmntEx>

Amount of the POS record excluding VAT tax.

<amntTp>

An increase in revenue (such as sales) is to be marked as C.

While a decrease in revenue (such as returns) is to be marked as D.

<empID>

User who executes this record.

<lineDate>

POS record creation date.

<lineTime>

POS record creation time.

<vat>

VAT details of the POS record.

<discount>

Discount details of the POS record

X and Z report Structure

X-Report

An X Report must contain at least the following information:

- an inscription that the report is an X report
- the name and organization number of the enterprise
- the date and time
- the ID number of the Cash Register System (UWID). It must be a unique identifier that represents the PC Workstation that prints the report, it must be not changeable and preferable a combination of letters and numbers. It must be unique on each business location (ship) and within the company's organization (fleet). It must also be unique in case of Workstation replacement.
- total cash sales
- the number of cash sales and amounts broken down by different means of payment
- the number of cash sales and amounts broken down by different means of payment for each individual operator (user)
- the number of tips and amount
- sales subject to value added tax and sales free from value added tax, as well as value added tax subdivided into different value added tax rates
- opening change float
- the number of Sales receipts
- the number of Copy receipts and amount (currently not applicable for OHC SPMS)
- the number of pro forma receipts and amount
- the number of returns and amount
- the number of discounts and amount
- number of Delivery receipts and amount
- grand total sales
- grand total returns (voids)
- grand total net

Z-Report

A Z Report must contain at least the same information as X Report except of the following:

- an inscription that the report is an Z report
- a Z Report number that represents a unique counter which is increased every time it is run. This means that a Z Report must not have the same number as an earlier Z Report
- The Z Report must not contain transactions that have been included in an earlier Z Report.