07-23-2013

eNet Validation Application System (eNet) for Element® User's Guide

Created By:

Automation & Management Consulting, LLC

Table of Contents

Prerequisites

Element Server and Lane Equipment

The system requires that the Element from 3M has been purchased and installed. Element must be configured and running as a service on the network, the ticket inventory feature for Element must be being utilized, as well as the XML Module activated in the Element server (see Element manual). The global administrator user ID and password to be used for communications by eNet to the Element server must be setup. Also, all lane equipment must be properly configured to accept and request on-line validations.

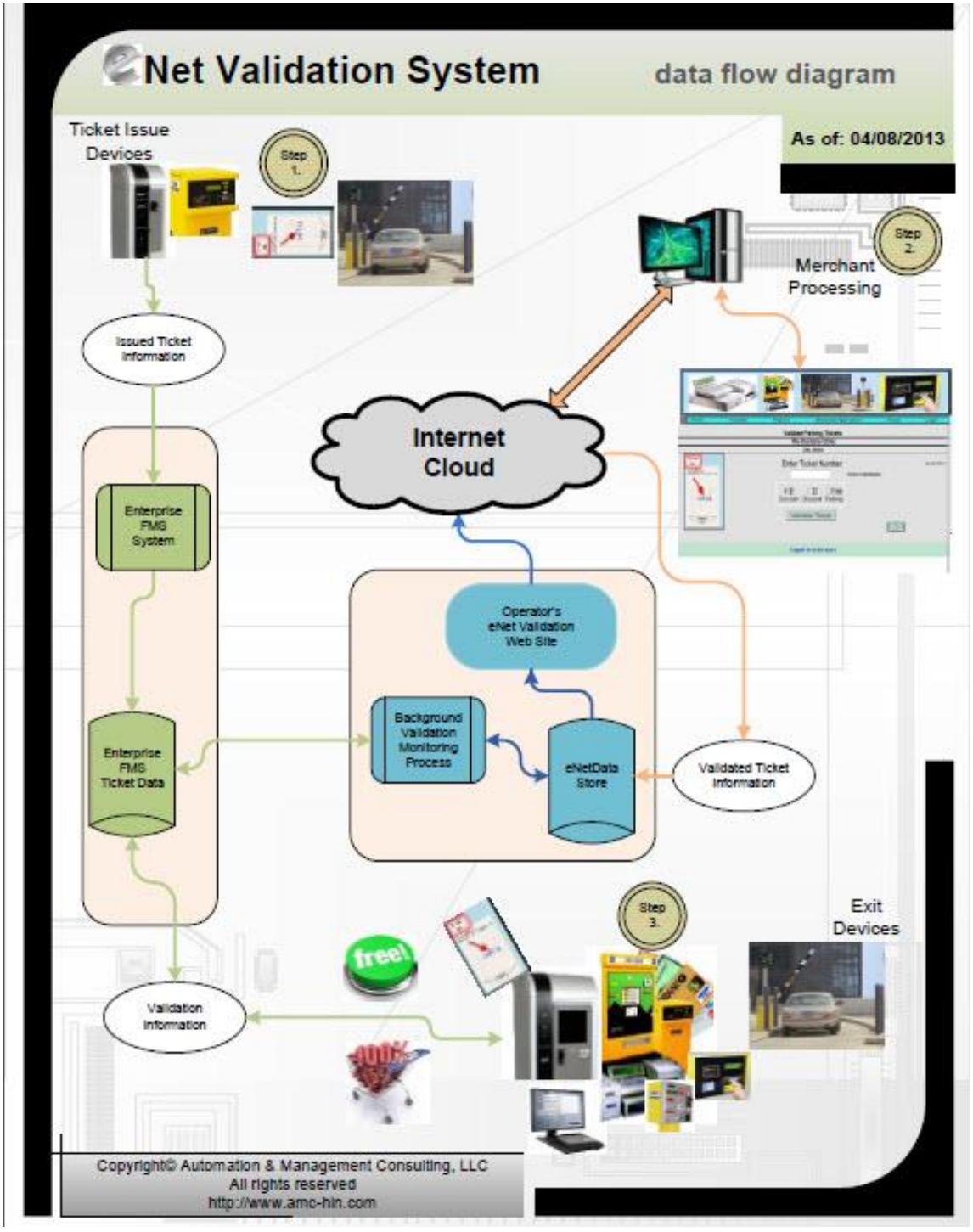
eNet System

Element client must be installed on the eNet server and verified that it can communicate with the Element server. All validation accounts must be defined to match the definition of the same validation account on the lane equipment. Also, the lane codes must be configured for the ticket issue devices you want to be a part of the validation tickets. Only the defined tickets issued from the defined lanes will be available for eNet validation. All merchant accounts that are to be billed for their validations must be added to the merchant setup section of the eNet Validation application.

Additional Notes

The program allows the user to run the validation monitor program as an unattended operation. The validation monitor program will constantly check for validated tickets and add records to the Element traversal table for reporting purposes. The frequency that the monitor program checks for validated tickets is every 30 seconds by default or per the value set by the user in the settings maintenance form.

Data Flow Diagram



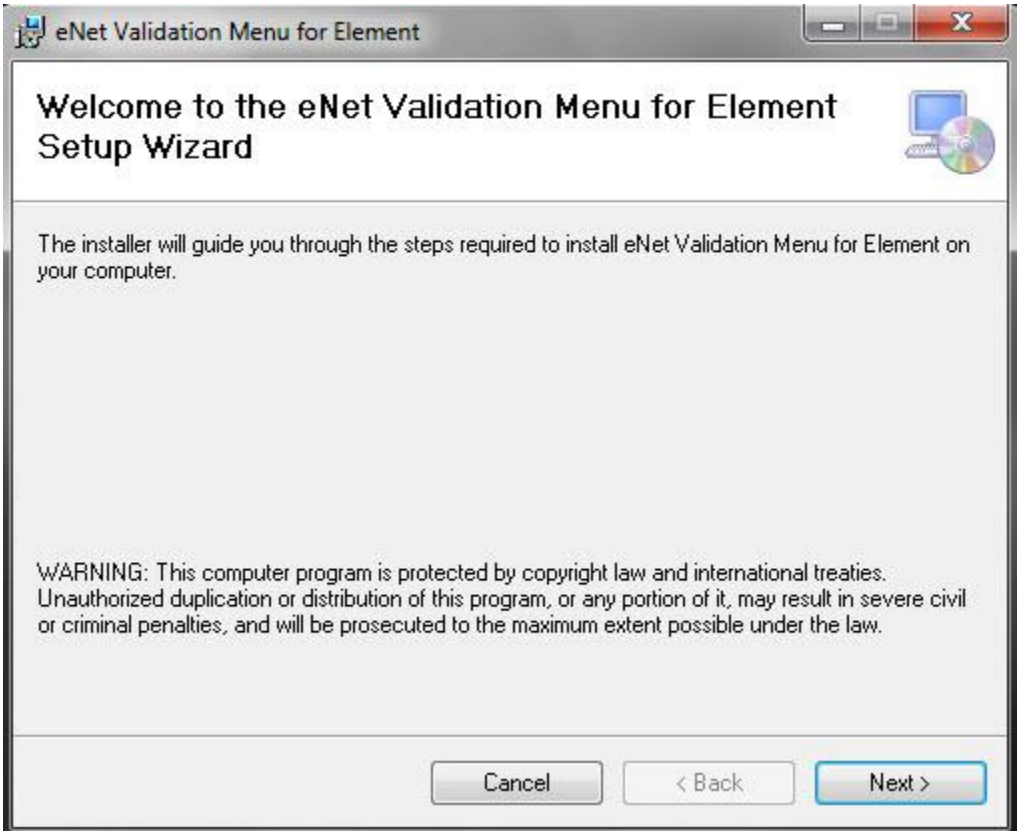
The flow chart provides a visual explanation for how the eNet Validation software program works. The eNet system is isolated from the FMS and runs on its own computer. The validation monitor program is the workhorse program of the eNet validation system. On the dataflow diagram, it is denoted as 'Background Validation Process'. The monitor program is the engine that communicates between the Enterprise FMS and the eNet Validation database. The program's main responsibility is moving transient ticket information between the eNet server and the Enterprise FMS.

General flow outline:

- A parker pulls a ticket at the entrance to the facility and enters
- Ticket issue device sends ticket to the Enterprise FMS
- Monitor program recognizes a new ticket has been issued and copies it to the eNet server database
- Parker approaches a Merchant to receive a validation
- Merchant logs into the eNet Validation web site
- Merchant selects the type of validation for the parker (I.E. full validation, $2 off, etc.) and applies to the ticket
- Monitor program recognizes a new validation for this ticket and sends the pending validation and its value to the Enterprise FMS
- Parker proceeds to a cashier or pay station and cashiers the ticket
    - Total charges are calculated
- Exit device queries Element on validity of ticket
- Element sends back the validation to the exit device
- Parker pays balance of ticket and leaves facility
- Monitor program recognizes that one if 'its' pending validations has been used by a parker, grabs information for the ticket and posts to the eNet database

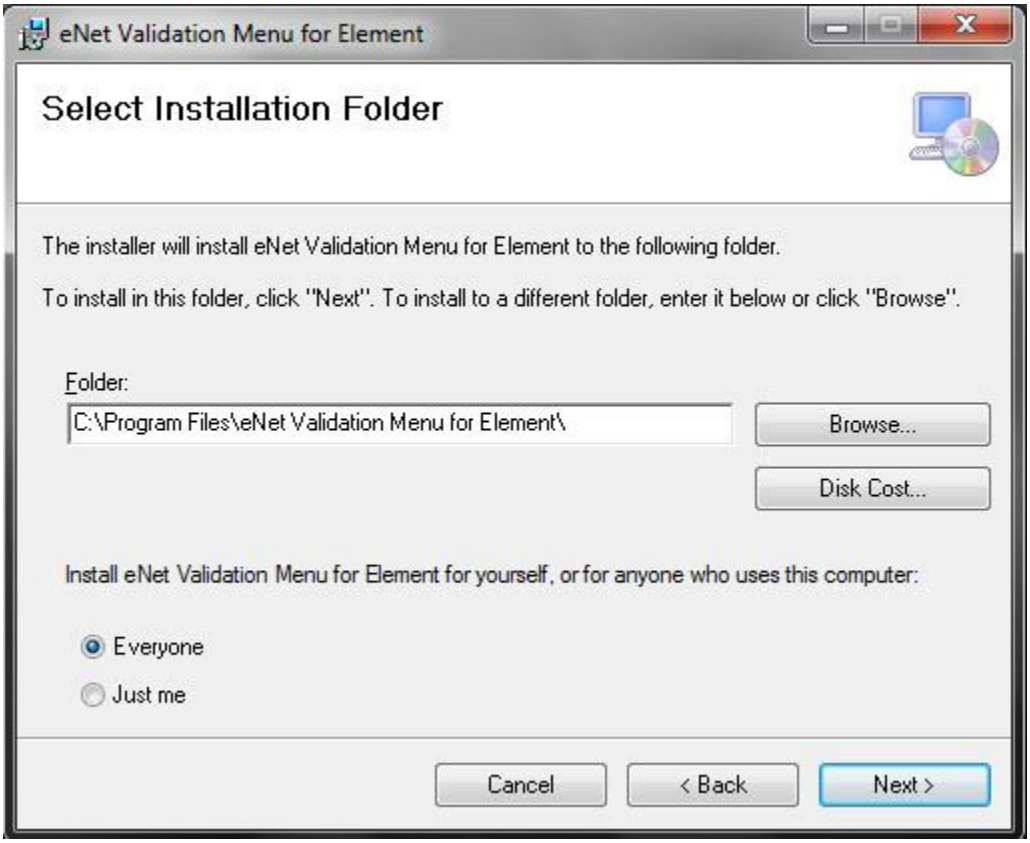
Install

Double click the steup.exe file. The following screen will appear:



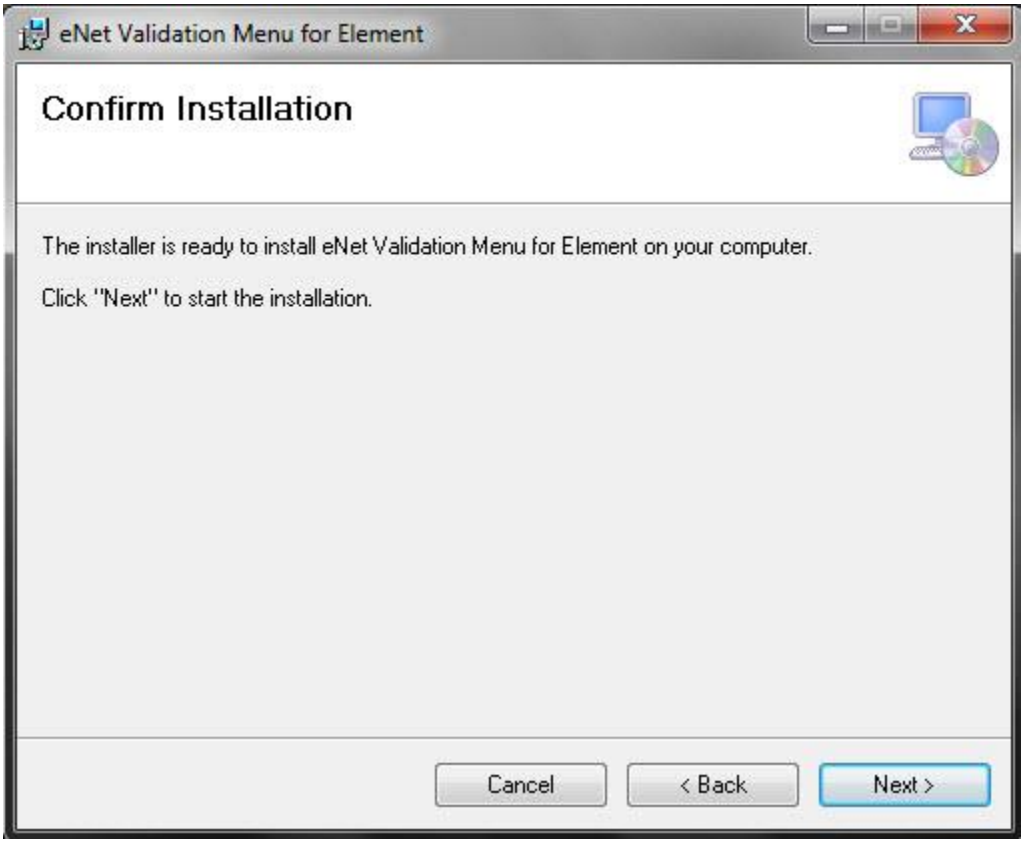
Click 'Next'

The following screen will appear:



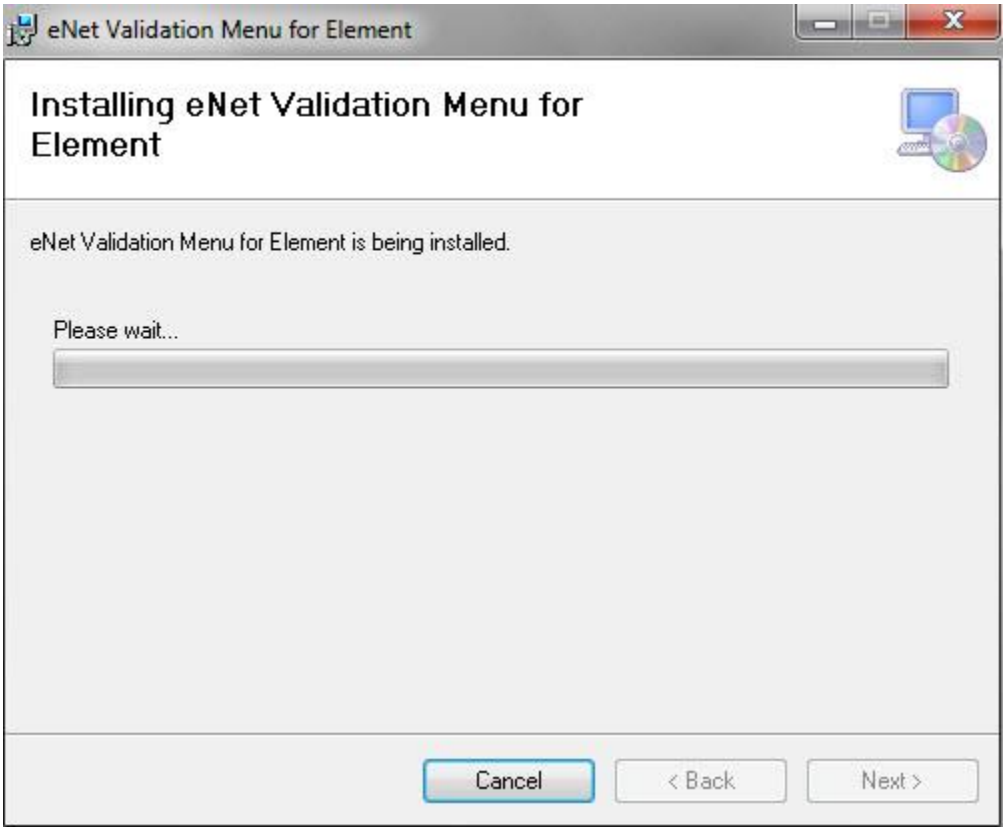
The user can determine where the application will install by clicking ‘Browse’, then selecting a folder. The user can also specify who can use this specific interface by clicking one of the two options, ‘everyone’ or ‘just me’. After the necessary changes are made, click ‘next’.

The following screen will appear:

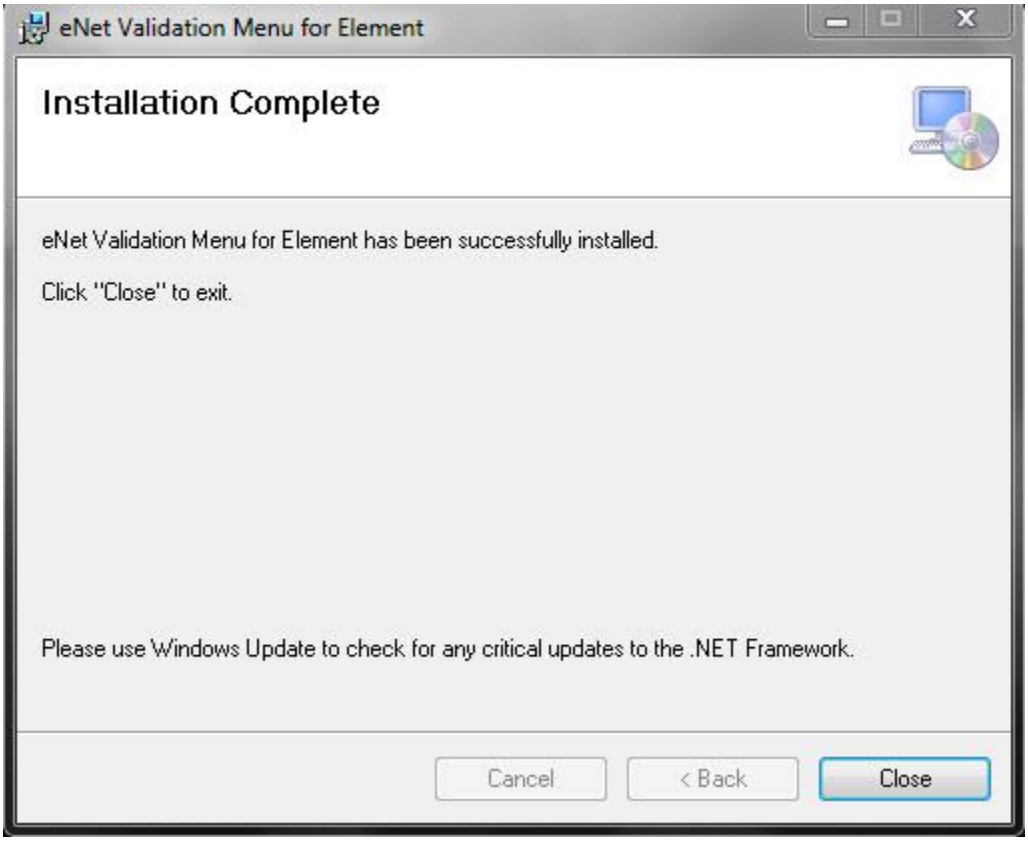


To continue with the installation, click ‘next’. (If changes need to be made for the installation destination or who can use the interface, press the ‘back’ button.)

The application setup will take a few moments to install. Progress of the installation will be shown in the rectangular bar with the message of 'please wait', shown below.

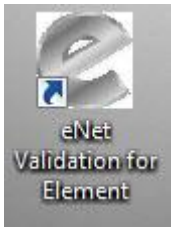


When completed the next screen will automatically be displayed, as shown below:



Click 'close' to exit the installation program. eNet Validation Menu for Element is now installed.

Two icons will appear on the desktop, as shown below:



eNet Validation for Element

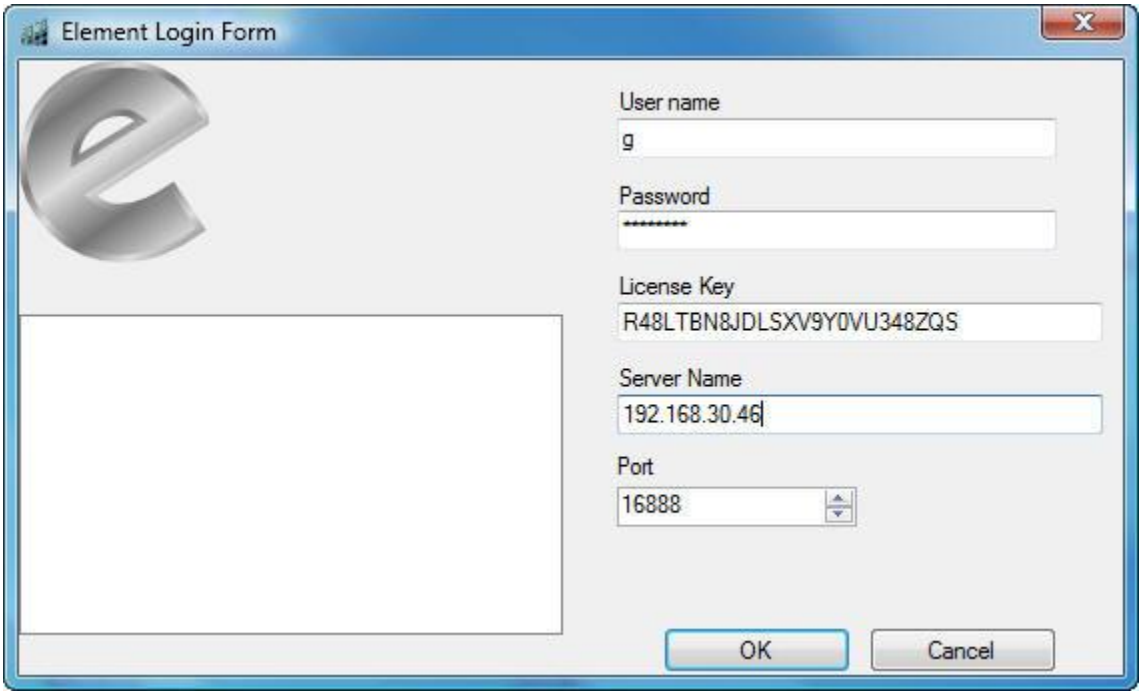
eNet Validation Monitor for Element

The Element monitor program

Element Login Form

To use the eNet Validation for Element software, the user must first open the application by finding the shortcut 'eNet Validation for Element', as shown above, and double click on it. It is necessary to enter all of settings information on the main Element Server login screen, as shown below. After filling out all fields and clicking 'ok', the program will automatically retain the necessary information for the Element server. The user must also specify the license key, server name, and communications port number.

When opening the program the following screen appears:

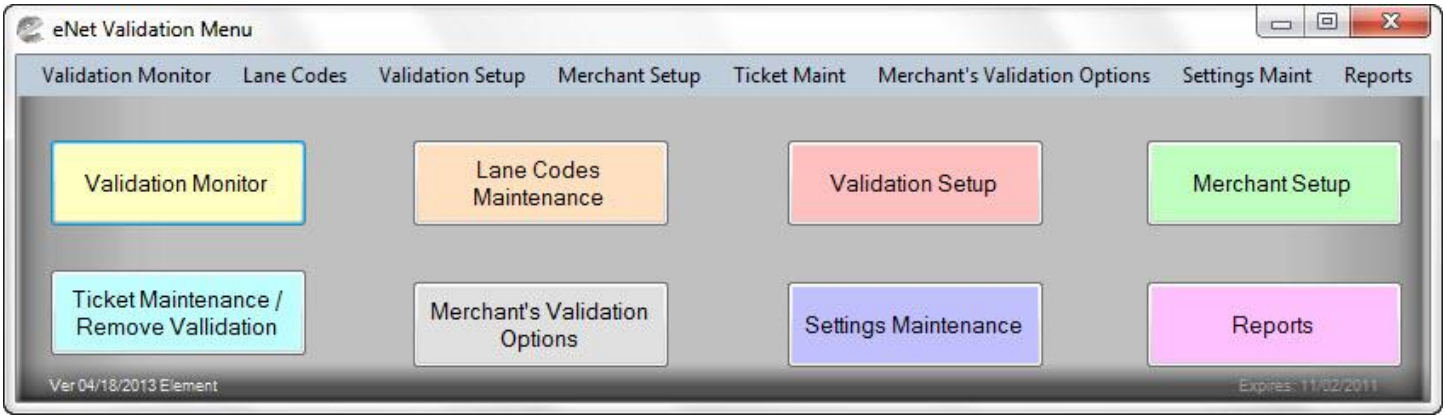


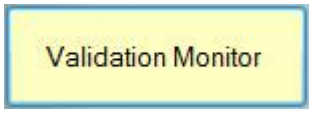
The user needs to enter the appropriate information used to connect to the Element Server. All of the above information has been provided from 3M to login into the Element Server with the Element Client.

Once all of the necessary information has been entered into each field, the user should click 'ok', which will bring up the eNet Validation Menu Toolbar.

eNet Validation Menu Toolbar

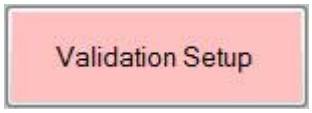
After entering all the data into the login form, the eNet Validation menu toolbar will appear, as shown below.





Validation Monitor Program

Lane Codes Maintenance



Validation Setup

Merchant Maintenance Setup

Ticket Maintenance, Purging, and Validation Removal

Merchant Validation Options

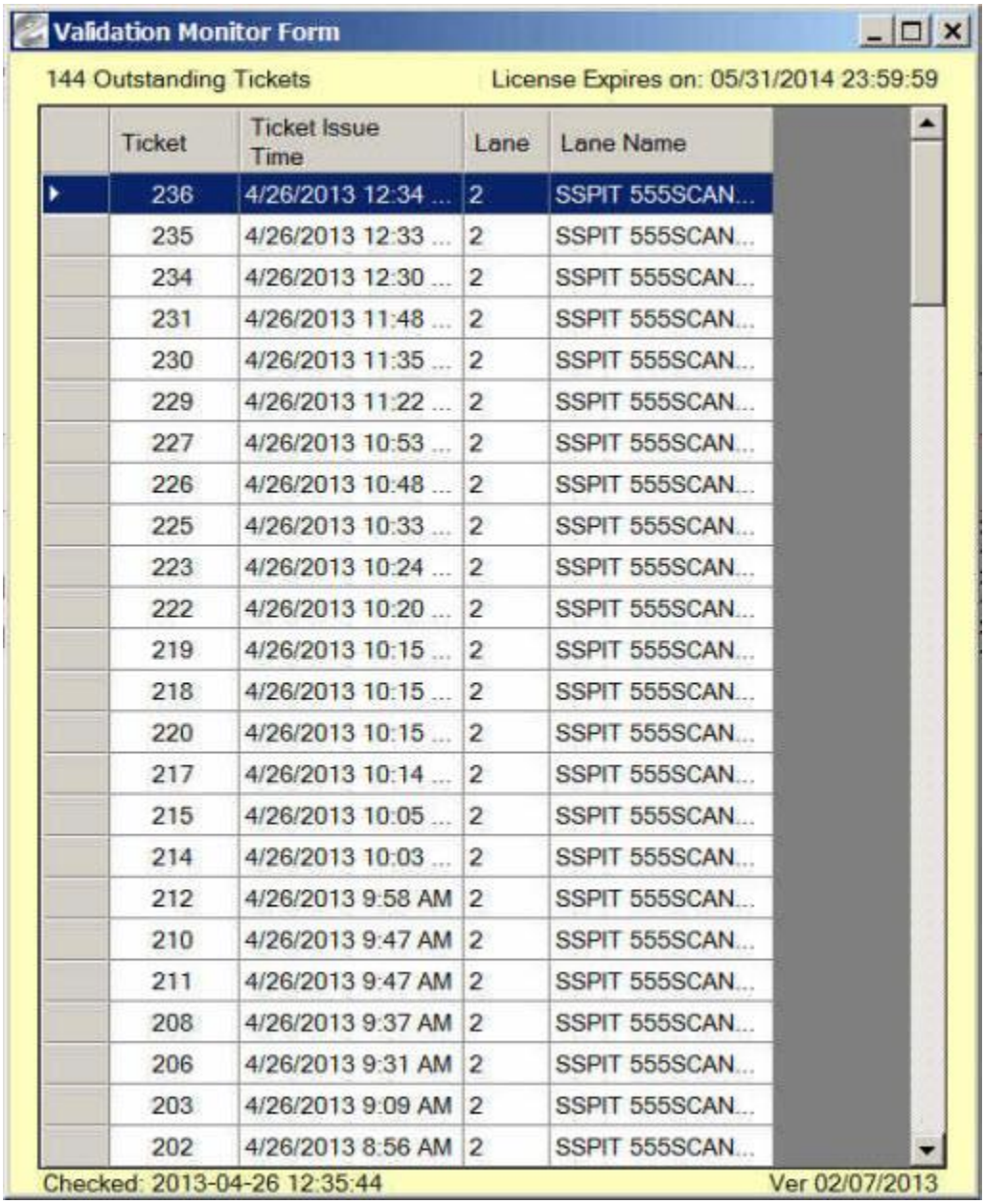
Settings for eNet Processing Maintenance

Reports for either Merchant Tickets, Operator Tickets, Merchant Validation Account Assigned Reports, or Validation Account Assigned Reports

Validation Monitor

Validation Monitor

The monitor program is the workhorse program of the eNet Validation system. It communicates between the Enterprise FMS and the eNet Validation database. Its main function is moving transient ticket information between the two.



During each cycle of the Monitor program (either every 30 seconds by default or per the value set by the user in the settings maintenance form), it performs the following tasks:

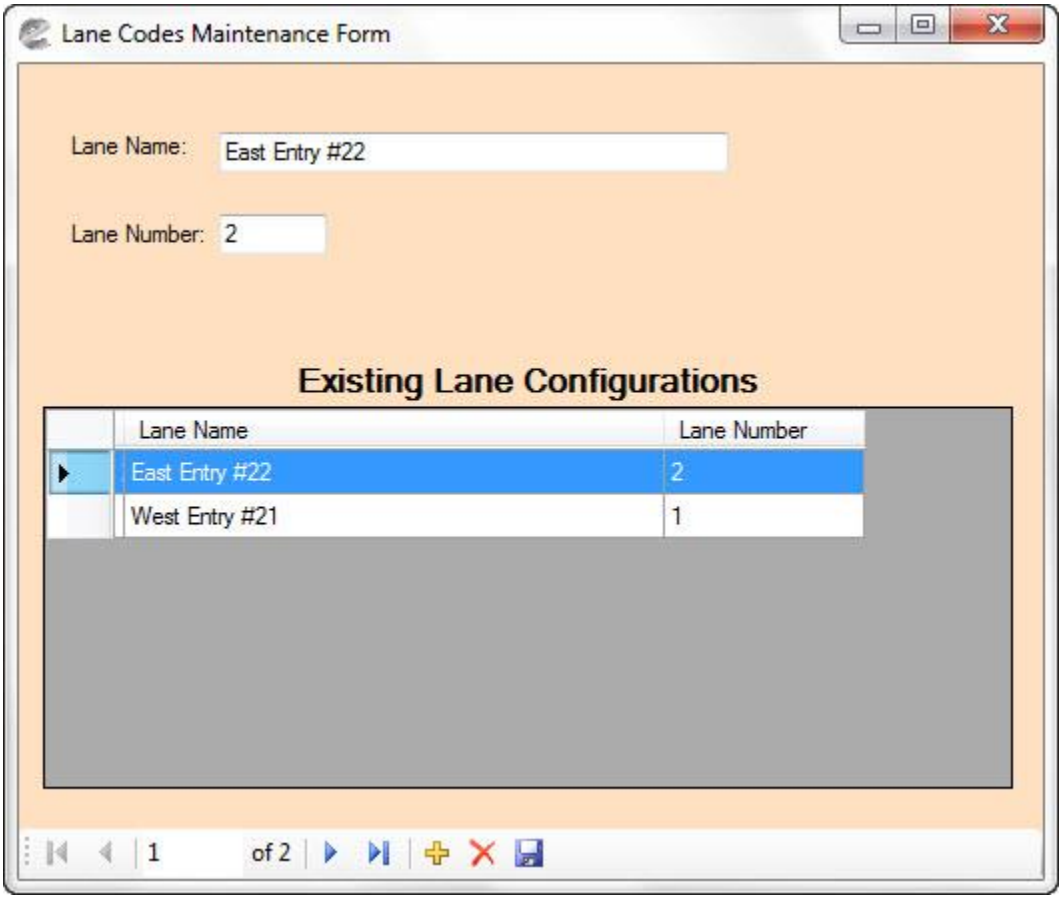
- Checks to see if the registration has expired regarding the use of the application.
- Looks for newly issued transient tickets in the Enterprise FMS and then posts those to the eNet database to make them available to the Merchant for validation.
- Checks for tickets that have been newly validated by the Merchant and adds a pending validation for each of those tickets into the Enterprise FMS.
- Scans for tickets on the Enterprise FMS that have exited the facility using the pending validation from the previous bullet point. If found the monitor program updates the information in the eNet database (for reporting purposes).
- Checks for tickets which are no longer in the facility. If found, it removes them from the eNet ticket pool so it can no longer be validated.
- Looks for 'expired' outstanding tickets and removes them from the eNet pool, based on the settings value.
- If this feature is used, it will also look for expired pending validations, if found, it will remove the pending validation from the ticket (based on the value predefined in the settings).

The validation monitor runs automatically in the background. The user can access the validation monitor to see the current tickets to be validated by double clicking on the validation monitor icon in the system tray (silver e symbol) of the computer screen, shown below.

The validation monitor will only run once the settings maintenance form had been correctly filled out and saved.

Lane Code Maintenance

The program allows the user to add, change, or delete lane configurations. The lane codes are utilized to help identify the validation record since tickets numbers are not unique in Element to the devices.

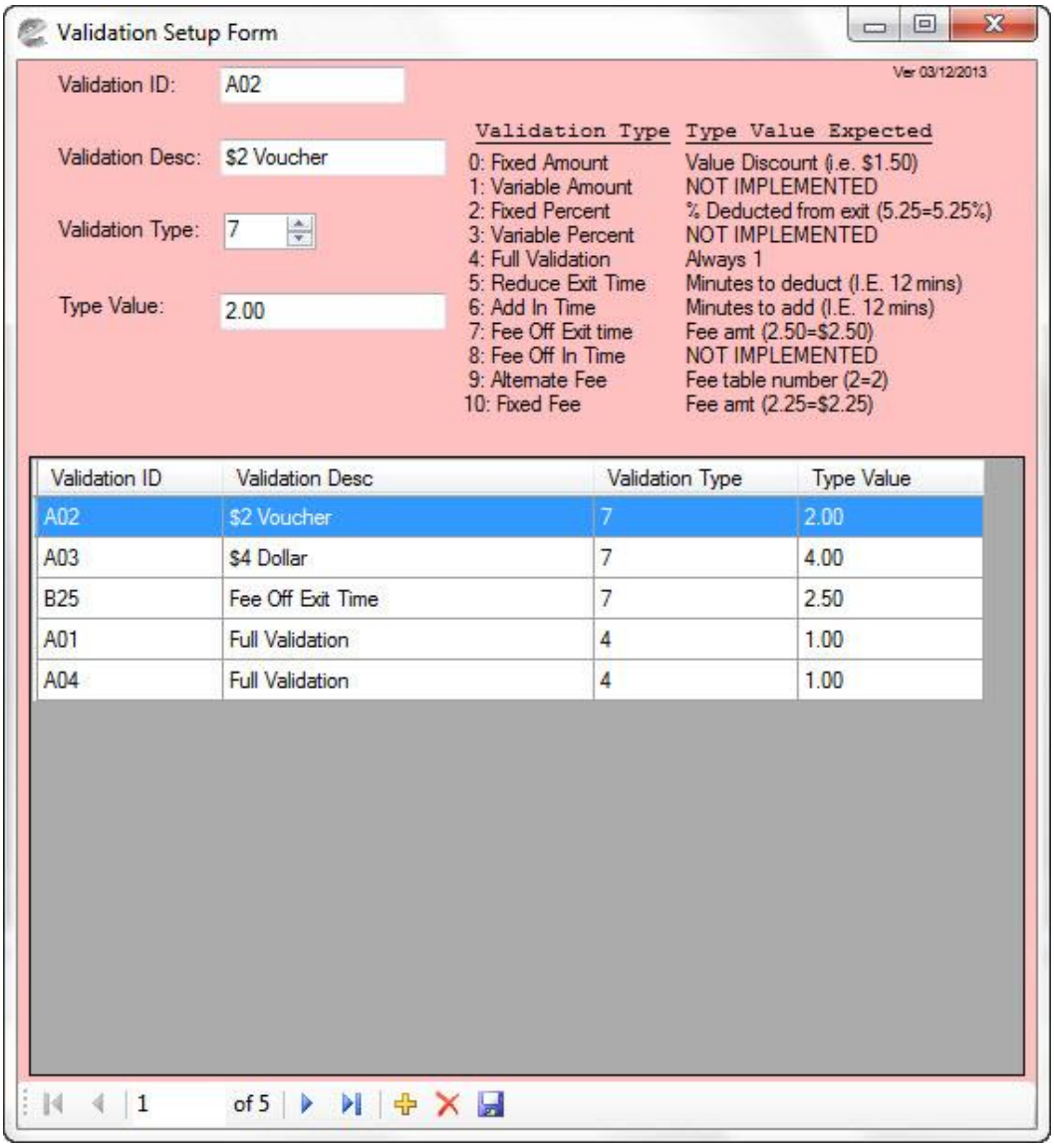


To add a new record, the user must click the '+' symbol on the bottom of the screen, enter in the desired lane name and number, and then click the blue rectangular save button on the bottom of the screen. To make changes to an entry, click on the entry under 'Existing Lane Configurations' so it's highlighted and make the necessary changes to the lane name or number in the above field(s), and then click save. If the user wants to delete a lane, click on the entry under 'Existing Lane Configurations' so its highlighted, click the red 'x' on the bottom of the screen to delete it, then click the save button to save your changes.

Validation Setup

Validation Setup

The validation setup form allows the user to create validations. The validation ID's are utilized to help identify the type of validation to be applied to a ticket. Shown below is the validation setup Form. The available validation types and the type value that is expected are displayed on the right side below. Also shown is the current list of validation ID's.



To add a new record, the user must click the '+' symbol on the bottom of the screen, enter in the Validation ID, description, type (found on the validation key to the right), and type value, and then click the blue rectangular save button on the bottom of the screen. The new record will be display in the list below. To make changes to an entry, click on the validation ID so it's highlighted. The highlighted record's details will be displayed in the fields above the list. Make the necessary changes to the record field(s) above, and then click save. If the user wants to delete a record, click on the entry under from the list so its highlighted, click the red 'x' on the bottom of the screen to delete it, then click the save button to save your changes.

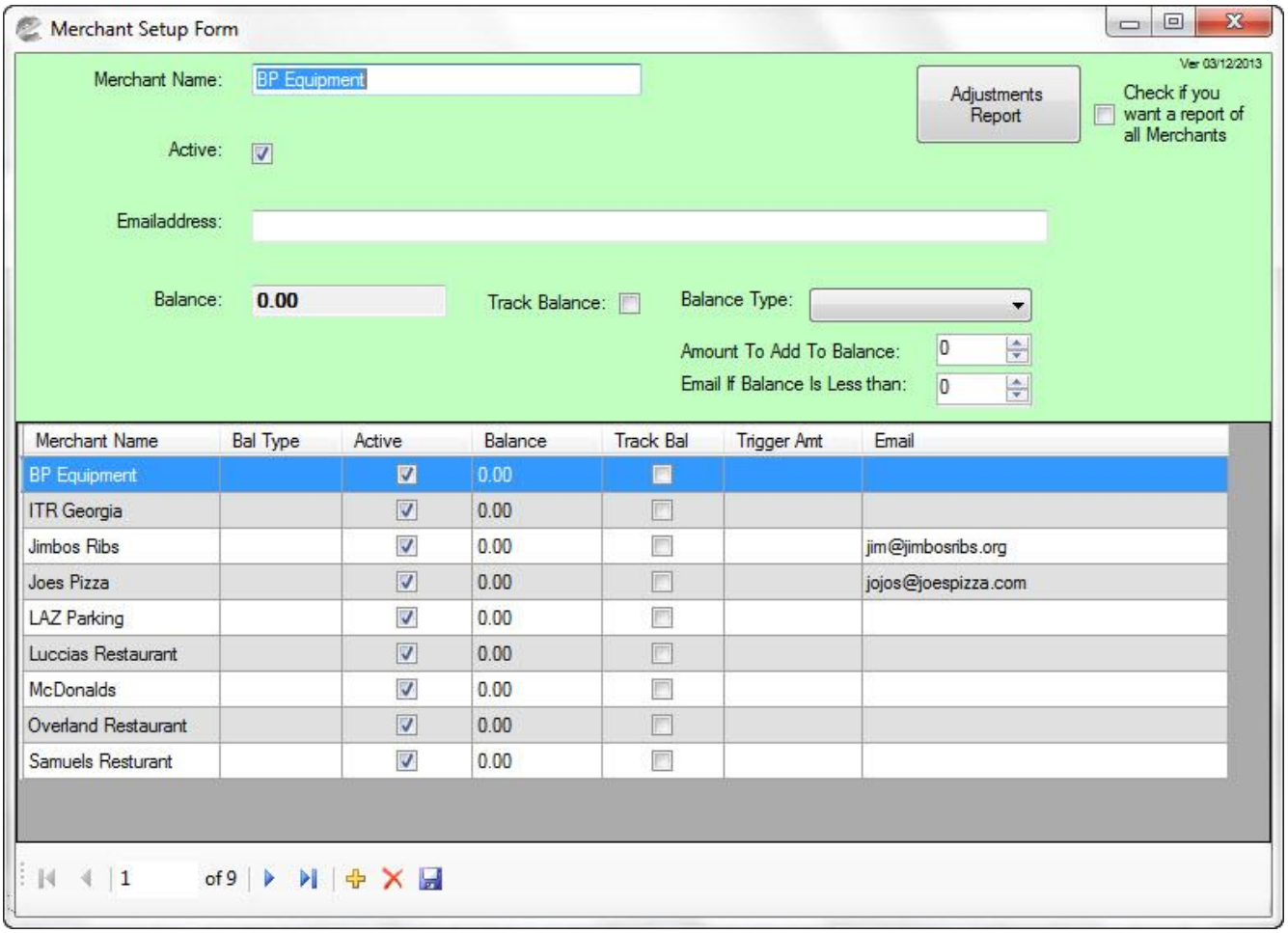
Merchant Setup Information

Merchant Setup

The Merchant setup screen is utilized to create, update, save, or delete merchant information. The operator will specify the merchant name, if it's active, an email address, and if the balanced should be tracked. If the balance is going to be tracked, the operator can also specify the balance type, amount to add to balance and balance amount minimum to require an email notification.

The email address is used to send email notifications for when a merchant has been authorized to participate in the program, any user id or password updates for their account, or if the balance is less than a predetermined amount.

The 'Balance' field represents the prepaid balance for the merchant to which ticket validations are applied against. The check box 'Track Balance' indicates if this merchant is enrolled in the prepaid validation billing process.



To add, edit, or delete records, use the '+', 'x', and save buttons on the bottom of the screen. The details for how to specifically use each have previously been explained in the validation setup and lane codes maintenance sections of this document.

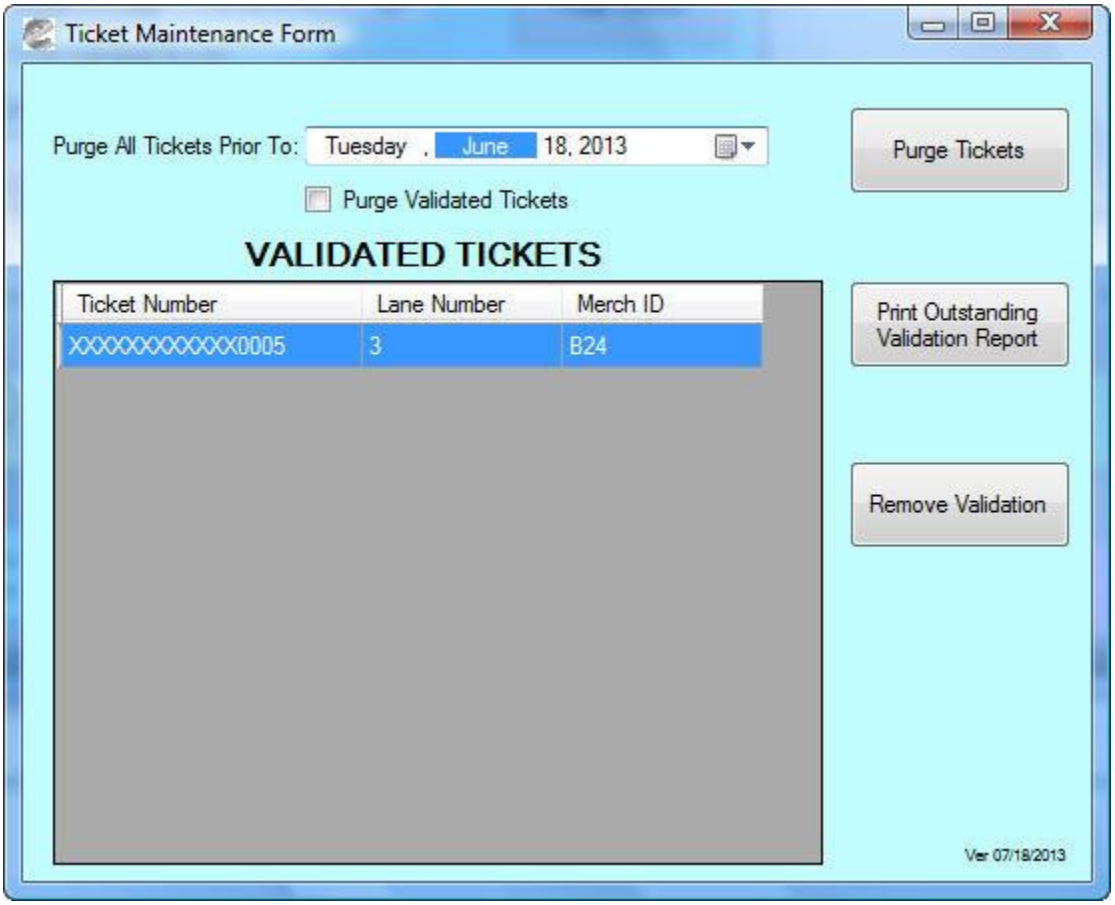
Ticket Maintenance/Remove Validation

The ticket maintenance program is used to purge old tickets that have not been validated. All tickets on file prior to date entered will be deleted from the eNet Validation system. The user can purge tickets by entering in the desired date in the field, then clicking the 'purge tickets' button.

To purge validated tickets, click the check box for 'purge validated tickets' then click the purge tickets button. The user must have a password to purge any validated tickets.

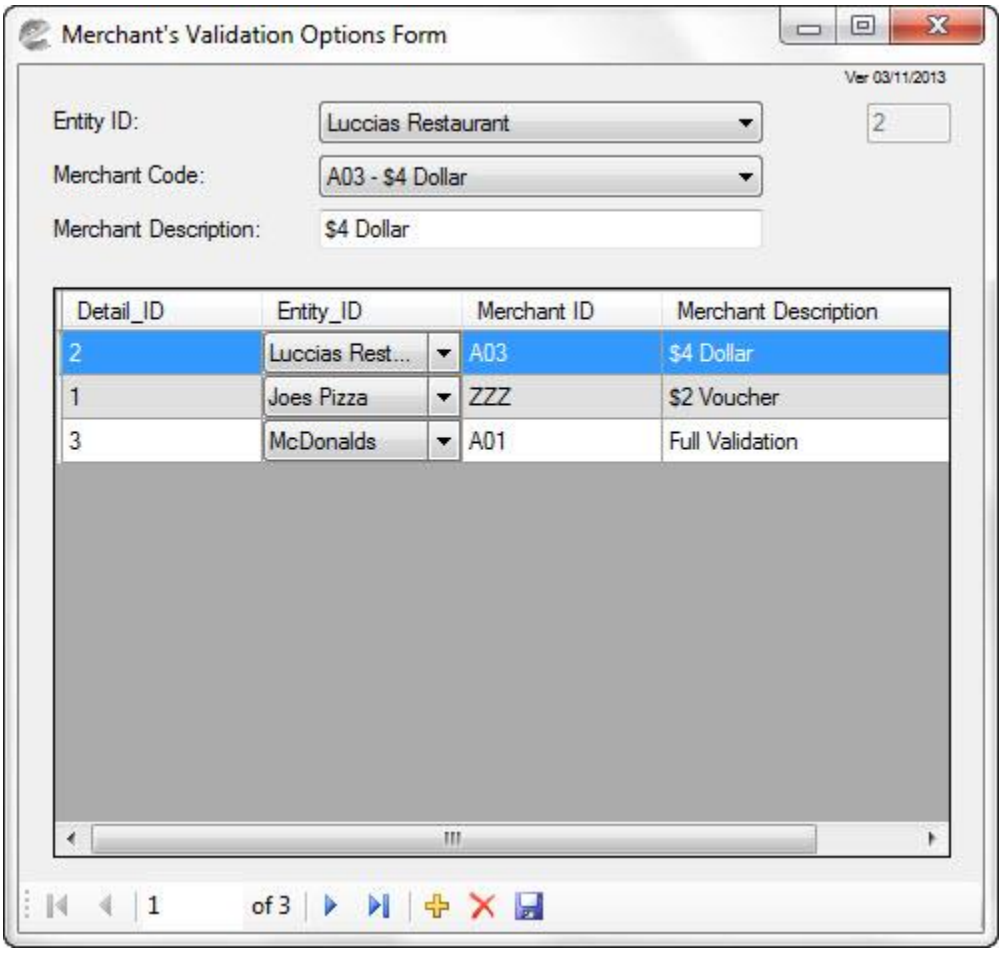
The user can also delete select validation records, by highlighting the record to be removed, then clicking the 'remove validation' button.

There is also the option to print all outstanding validated tickets. This report can be printed by clicking the "Print Outstanding Validation Report" button on the screen, shown below.



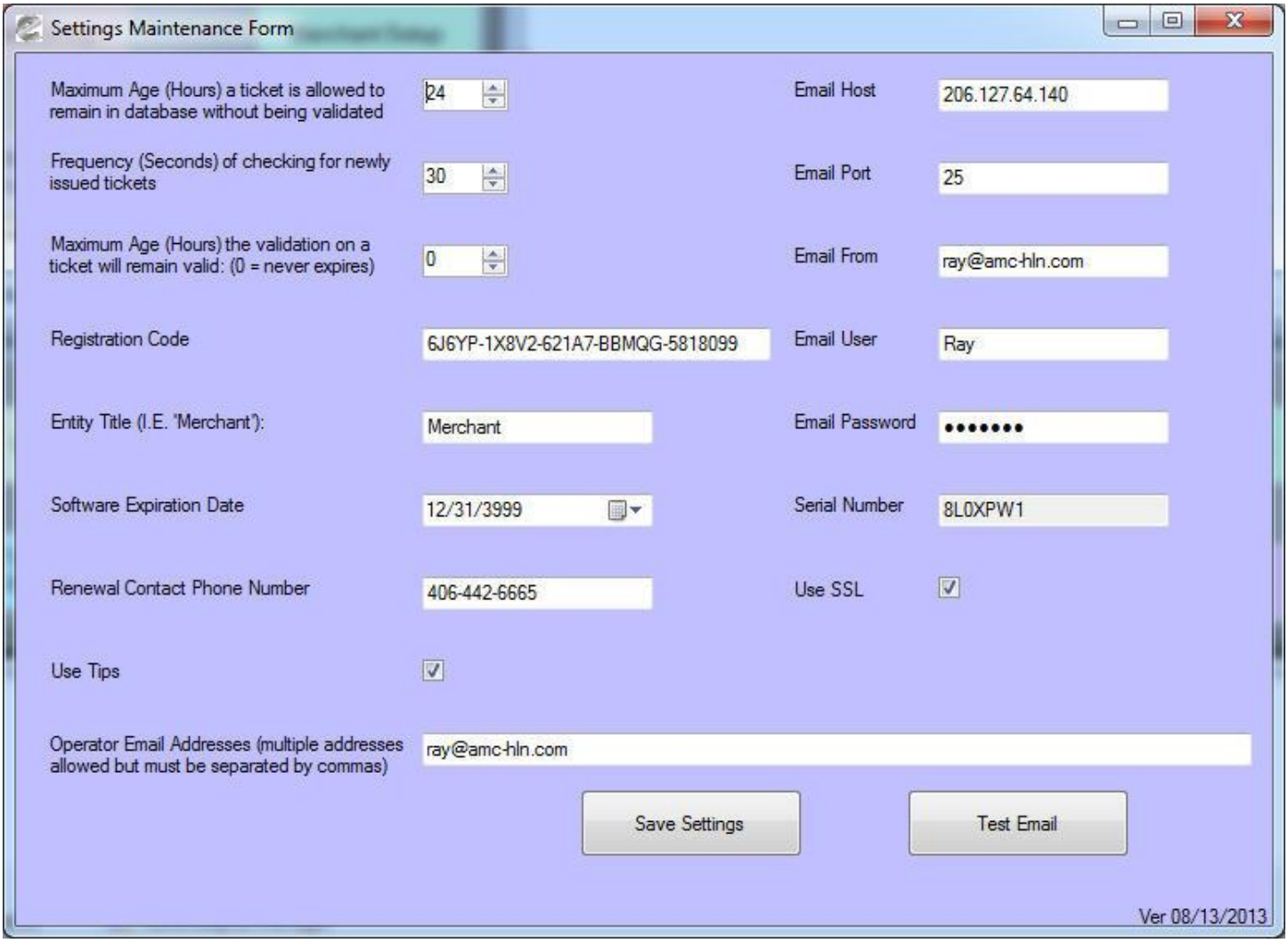
Merchant's Validation Options

The merchant's validation program is used to specify validation options. The user can select an entity ID, the desired merchant code and enter a description. To add, edit, or delete records use the symbols on the bottom of the screen as shown below. Details for how to edit records is explain in the 'lane codes maintenance' and 'validation setup' sections of this document.



Settings Maintenance

The settings maintenance program is used to maintain information critical for eNet Validation processing.



The maximum age in hours a ticket is allowed to remain in the database without being validated requires the operator to enter the number of hours these tickets are allowed to remain in the system. The frequency of the monitor program checking for newly issued tickets is determined by the number of seconds manually entered into the field on the form. The user must also enter the maximum age in hours that a validation ticket will remain valid (An entry of 0 denotes that the validation will never expire).

The check box “Use Tips” allows for an additional charge, a tip, to be added to a validation. If the box is checked, when a ticket is validated there will be an option for the user to add an additional amount to the value of the ticket. The user adds the tip when exiting the parking facility/validating their ticket. If the box is not checked, then this option will not be seen by the user. The default is for the box not to be checked.

The registration code, serial number and expiration date are used to validate if the user has a current authorized program. The program has to be currently registered on an annual basis by providing the serial number of the computer to obtain a valid registration code and expiration date.

Email information such as email host address, port address from, user, password, and operator email address are used to remind operators that their eNet Validation program is expiring and that they need to register their copy of the application. The checkbox ‘Use SSL’ allows the advanced features to be enabled. (Checking the box will also indicate if these modifications are available to the operator running the application). To test if the email information is entered correctly, click the ‘Test Email’ button and a test email will be sent.

The renewal contact phone number is used to identify the phone number to call to register the application.

Reports

This application allows the user to run related reports directly on your PC. A list available reports and an example of each is shown below.

Merchant Tickets Report: Shows all tickets for a specific merchant

Operator Tickets Report: Shows all tickets for an operator who is participating in the eNet Validation process

Merchant Validation Accounts Assigned Reports: Displays all validated accounts assigned to a merchant. Also has the option to print a report for all merchants.

Validation Accounts Assigned Reports: Report of all assigned validation accounts

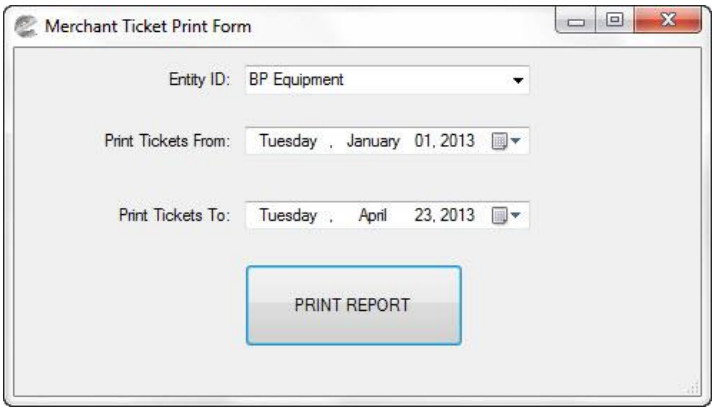
Outstanding Validated Ticket Report: Displays all outstanding validated tickets

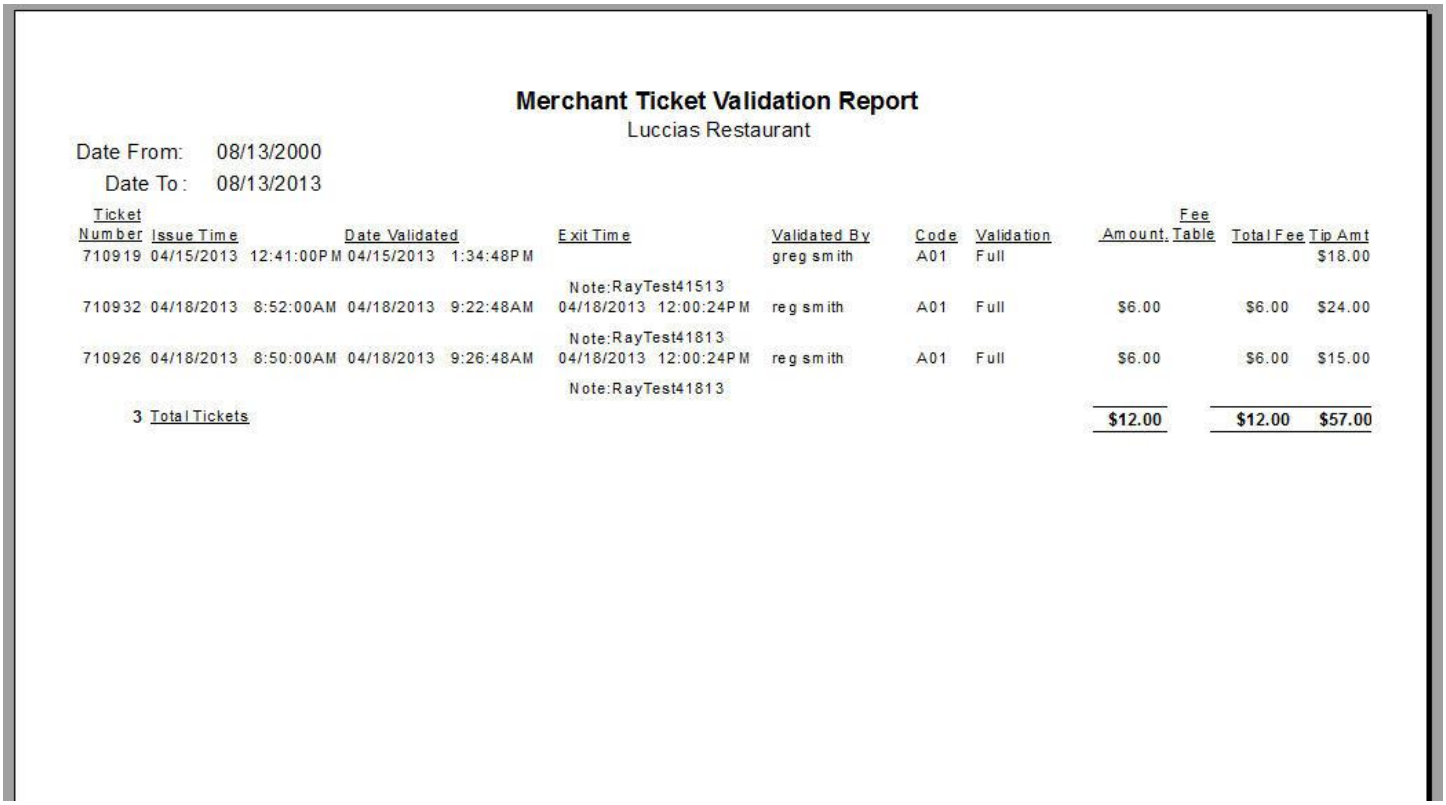
Sample Reports

Merchant Tickets Report

The merchant ticket report shows all the tickets for a specific merchant. The user can select which merchant to report on by choosing from the entity ID field, then selecting the date range to view. After the fields have been fill out how desired, click the 'print report' button and the report will be displayed in the crystal report viewer form. From there the user can either print or export the report to another program. Examples of the merchant ticket(s) reporting process are shown below.

Please note that if the "Use Tips" box is not checked on the Settings Maintenance form that the 'tip amount' column on the report will not be displayed.





Merchant Ticket Validation Report

Luccias Restaurant

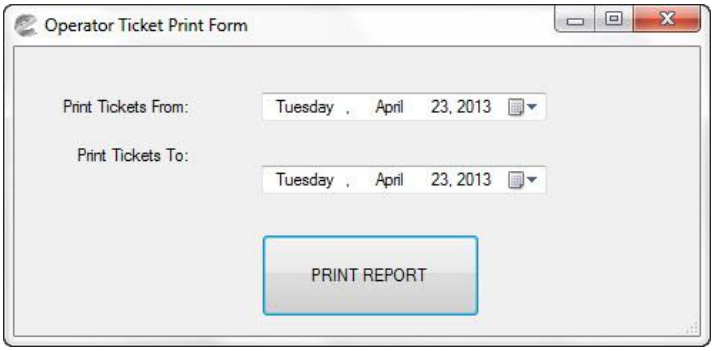
Date From: 08/13/2000
Date To: 08/13/2013

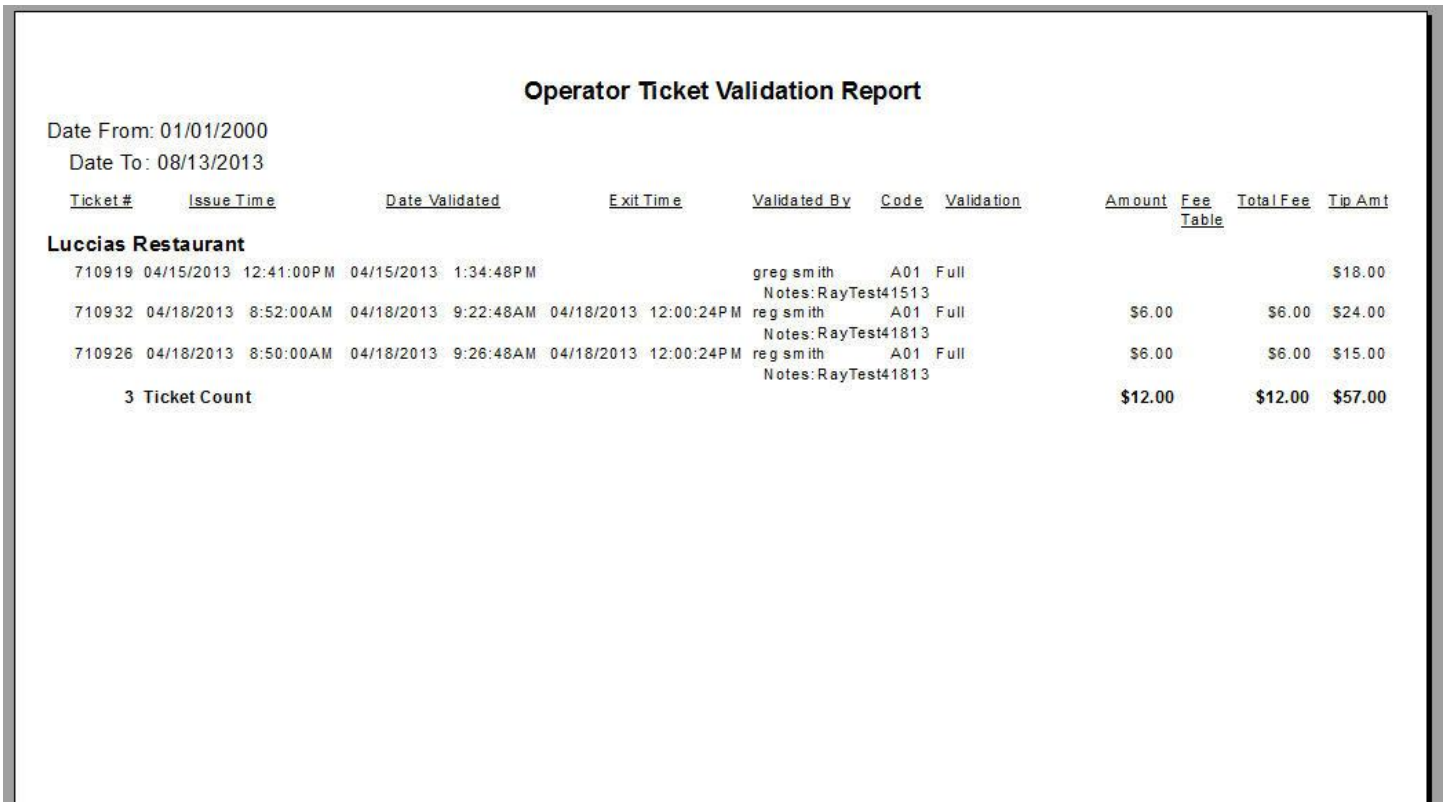
Ticket Number	Issue Time	Date Validated	Exit Time	Validated By	Code	Validation	Amount	Fee Table	Total Fee	Tip Amt
710919	04/15/2013 12:41:00PM	04/15/2013 1:34:48PM		greg smith	A01	Full				$18.00
			Note:RayTest41513							
710932	04/18/2013 8:52:00AM	04/18/2013 9:22:48AM	04/18/2013 12:00:24PM	reg smith	A01	Full	$6.00		$6.00	$24.00
			Note:RayTest41813							
710926	04/18/2013 8:50:00AM	04/18/2013 9:26:48AM	04/18/2013 12:00:24PM	reg smith	A01	Full	$6.00		$6.00	$15.00
			Note:RayTest41813							
3 Total Tickets							$12.00		$12.00	$57.00

Operations Ticket Report

The operations ticket report shows all the tickets for an operator who is participating in the eNet Validation process. The user must select the date range to view, shown below. Once the date range has been selected, click the 'print report' button and the report will be displayed in the crystal report viewer form. From there the user can either print or export the report to another program. Examples of the operations ticket reporting process are shown below.

Please note that if the "Use Tips" box is not checked on the Settings Maintenance form that the 'tip amount' column on the report will not be displayed.





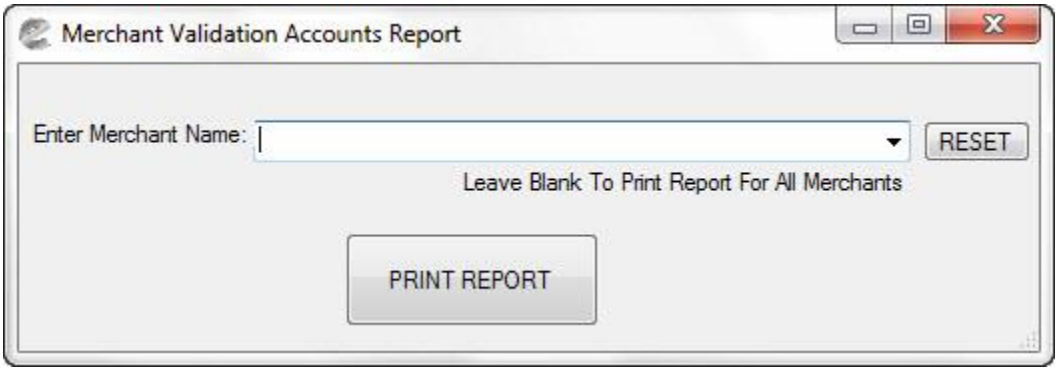
Operator Ticket Validation Report

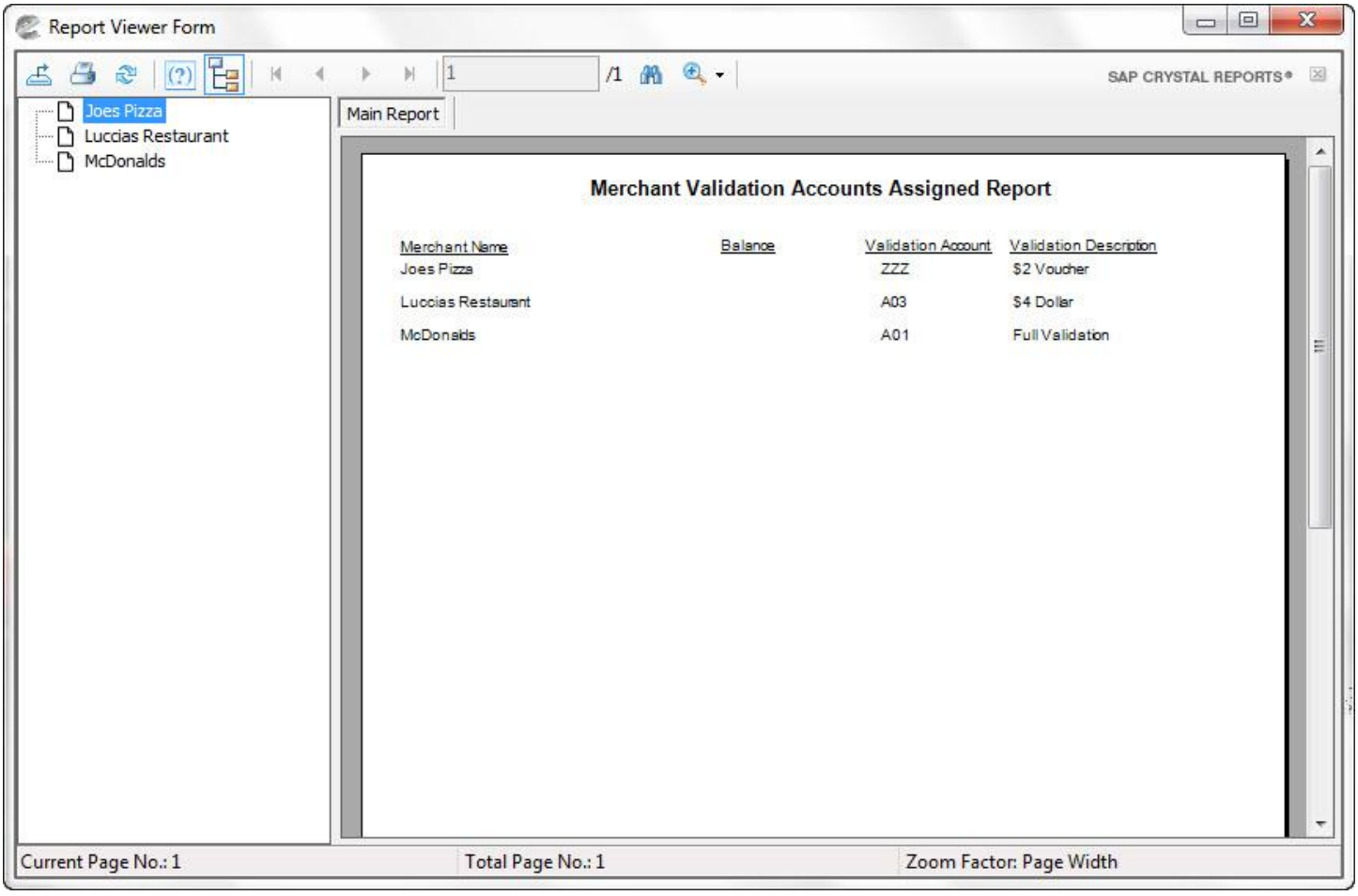
Date From: 01/01/2000
Date To: 08/13/2013

Ticket #	Issue Time	Date Validated	Exit Time	Validated By	Code	Validation	Amount	Fee Table	Total Fee	Tip Amt
Luccias Restaurant										
710919	04/15/2013 12:41:00PM	04/15/2013 1:34:48PM		greg smith	A01	Full				$18.00
				Notes: RayTest41513						
710932	04/18/2013 8:52:00AM	04/18/2013 9:22:48AM	04/18/2013 12:00:24PM	reg smith	A01	Full	$6.00		$6.00	$24.00
				Notes: RayTest41813						
710926	04/18/2013 8:50:00AM	04/18/2013 9:26:48AM	04/18/2013 12:00:24PM	reg smith	A01	Full	$6.00		$6.00	$15.00
				Notes: RayTest41813						
3 Ticket Count							**$12.00**		**$12.00**	**$57.00**

Merchant Validation Account Assigned Reports

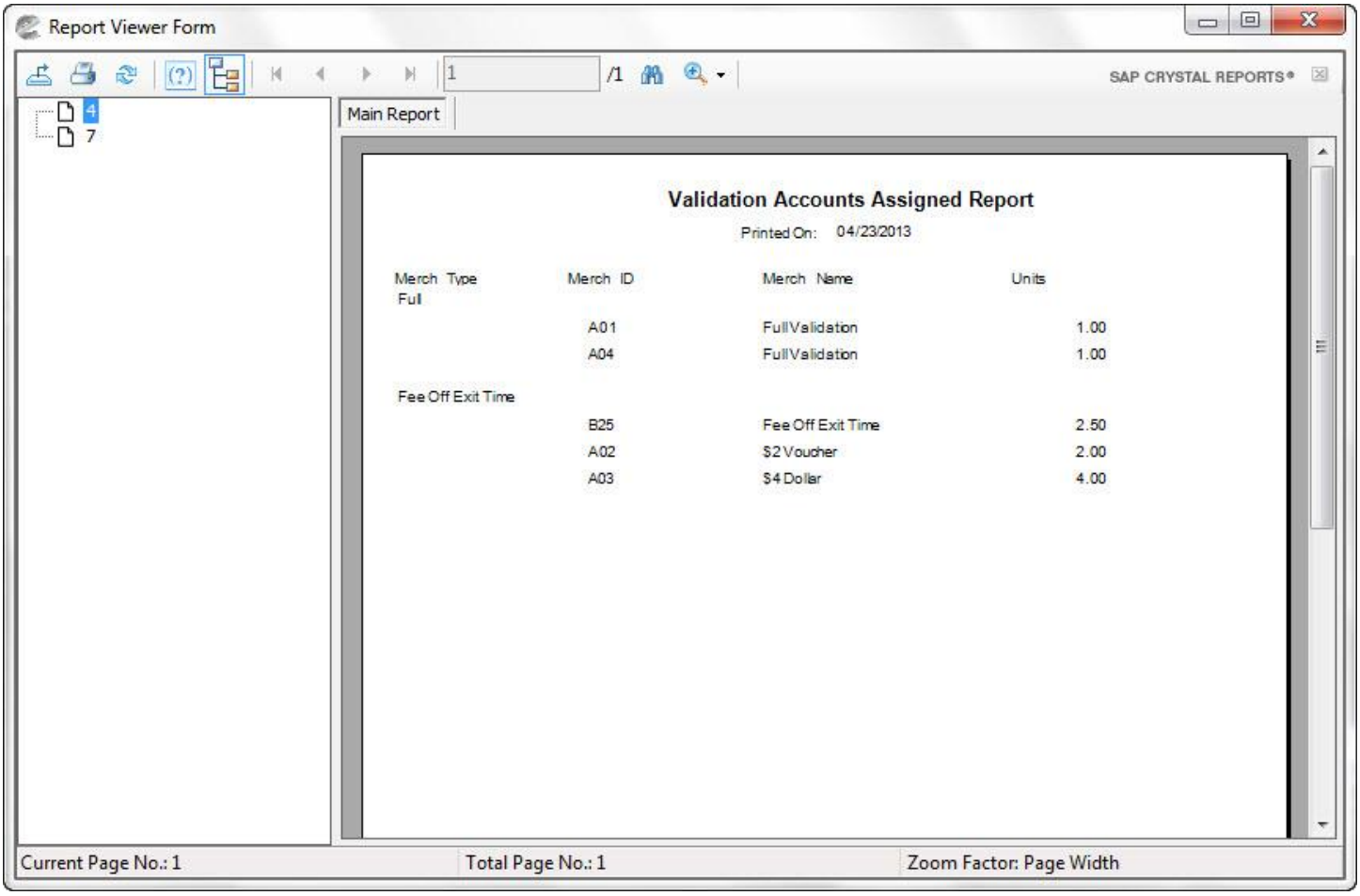
The merchant validation account(s) assigned report displays all of the validated accounts assigned to a specific merchant, with the option to print a report for all merchants. The user can select a merchant to view or leave the field blank to report on all merchants and then click the 'print report' button. The report will be displayed in the crystal report viewer form. From there the user can either print or export the report to another program. Examples of the operations ticket reporting process are shown below.





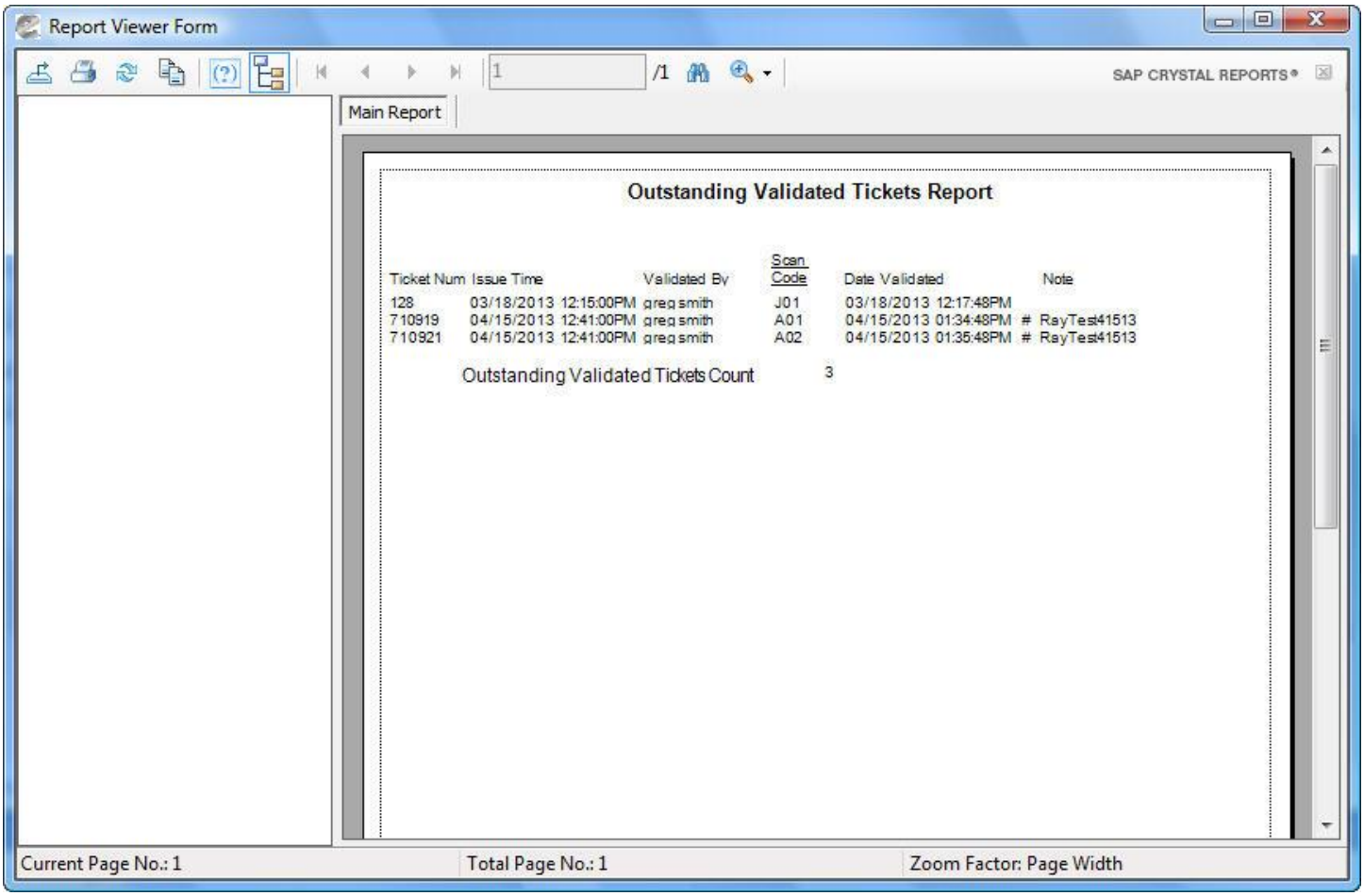
Validation Account Assigned Reports

The validation account assigned report displays all assigned validation accounts. Once selecting this option from the reports button, the report of all validation accounts assigned will be displayed in the crystal report viewer form. From there the user can either print or export the report to another program. A report example is shown below.

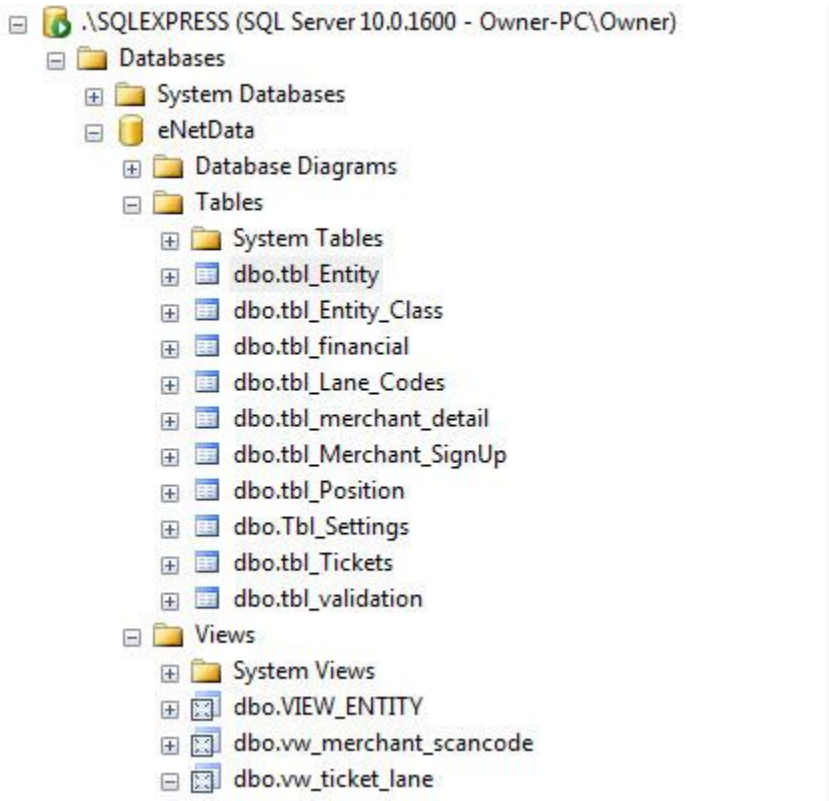


Outstanding Validated Tickets Report

The outstanding validated tickets report displays all of the outstanding validated tickets. This report can be generated from the ticket maintenance/remove validation form or by selecting the option from the reports button on the main menu screen. Once this option is selected, a report will be displayed in the crystal report viewer form. From there the user can either print or export the report to another program. A report example is shown below.



Microsoft SQL Server Management Setup



System Tables

Tbl_entity

Entity Table

Column Name	Data Type	Allow Nulls
EntityID	int	☐
ScanCode	char(3)	☑
ScanName	varchar(50)	☑
EntityName	varchar(50)	☑
EntityClass	int	☑
Active	bit	☐
Balance	numeric(10, 2)	☐
Track_Balance	bit	☐
Emailaddress	varchar(250)	☑
		☐

Tbl_Entity_Class

Entity Class Table

Column Name	Data Type	Allow Nulls
EntityClass	int	☐
EntityName	varchar(50)	☑
		☐

Tbl_financial

Financial table

Column Name	Data Type	Allow Nulls
Detail_ID	int	☐
Merch_ID	char(3)	☐
Journal_Date	datetime	☑
tran_type	char(10)	☑
payment_date	datetime	☑
payment_amt	numeric(10, 2)	☑
system_date_time	datetime	☑
payment_type	char(10)	☑
payment_memo	varchar(255)	☑
operator_id	varchar(32)	☑
merch_name	varchar(50)	☑
bal_type	char(10)	☑
		☐

Tbl_lane_codes

Lane Codes Table

Column Name	Data Type	Allow Nulls
LaneID	int	☐
LaneName	varchar(50)	☑
FacilityName	varchar(50)	☑
Lane_Number	int	☑
		☐

Tbl_merchant_detail

Merchant Detail Table

Column Name	Data Type	Allow Nulls
Detail_ID	int	☐
Entity_ID	int	☐
ScanCode	char(3)	☑
Scan_Desc	varchar(50)	☑
		☐

Tbl_Merchant_Signup

Merchant Signup Table

Column Name	Data Type	Allow Nulls
MSignUpId	int	☐
[Merchant Name]	varchar(50)	☑
Address	varchar(40)	☑
City	varchar(30)	☑
State	varchar(2)	☑
Zip	varchar(10)	☑
Phone	varchar(15)	☑
[Contact Name]	varchar(30)	☑
EMail	varchar(100)	☑
Comments	varchar(MAX)	☑
[Date Processed]	datetime	☑
[Who Processed]	varchar(50)	☑
		☐

Tbl_position

Position Table

Column Name	Data Type	Allow Nulls
PositionID	int	☐
PositionName	varchar(50)	☑
		☐

Tbl_Settings

Settings Table

Column Name	Data Type	Allow Nulls
SettingID	int	☐
MaxAge	int	☑
Freqnewtickets	int	☑
Freqvaltickets	int	☑
RegistrationCode	varchar(50)	☑
AdvancedFlag	bit	☑
ExpDate	datetime	☑
EmailAddresses	varchar(250)	☑
RenewalNumber	varchar(50)	☑
HostAddress	varchar(50)	☑
Port	varchar(50)	☑
User_Name	varchar(50)	☑
Password	varchar(50)	☑
Email_From	varchar(50)	☑
last_ord_a3_txn_hdr	bigint	☑
notes	varchar(30)	☑
contactphone	varchar(50)	☑
merchant_title	varchar(50)	☑
		☐

Tbl_Tickets

Ticket Table

Column Name	Data Type	Allow Nulls
TicketID	int	☐
ticket_number	varchar(20)	☐
issue_time	datetime	☐
laneID	int	☑
transferred	datetime	☑
EntityID	int	☑
Posted	datetime	☑
ScanCode	char(3)	☑
UserName	varchar(30)	☑
Validation_amount	numeric(18, 2)	☑
balance_updated	bit	☑
notes	varchar(30)	☑
ord_a3_txn_hdr	bigint	☑
fee_table	bigint	☑
txn_time	datetime	☑
total_fee	numeric(18, 2)	☑
		☐

Tbl_validation

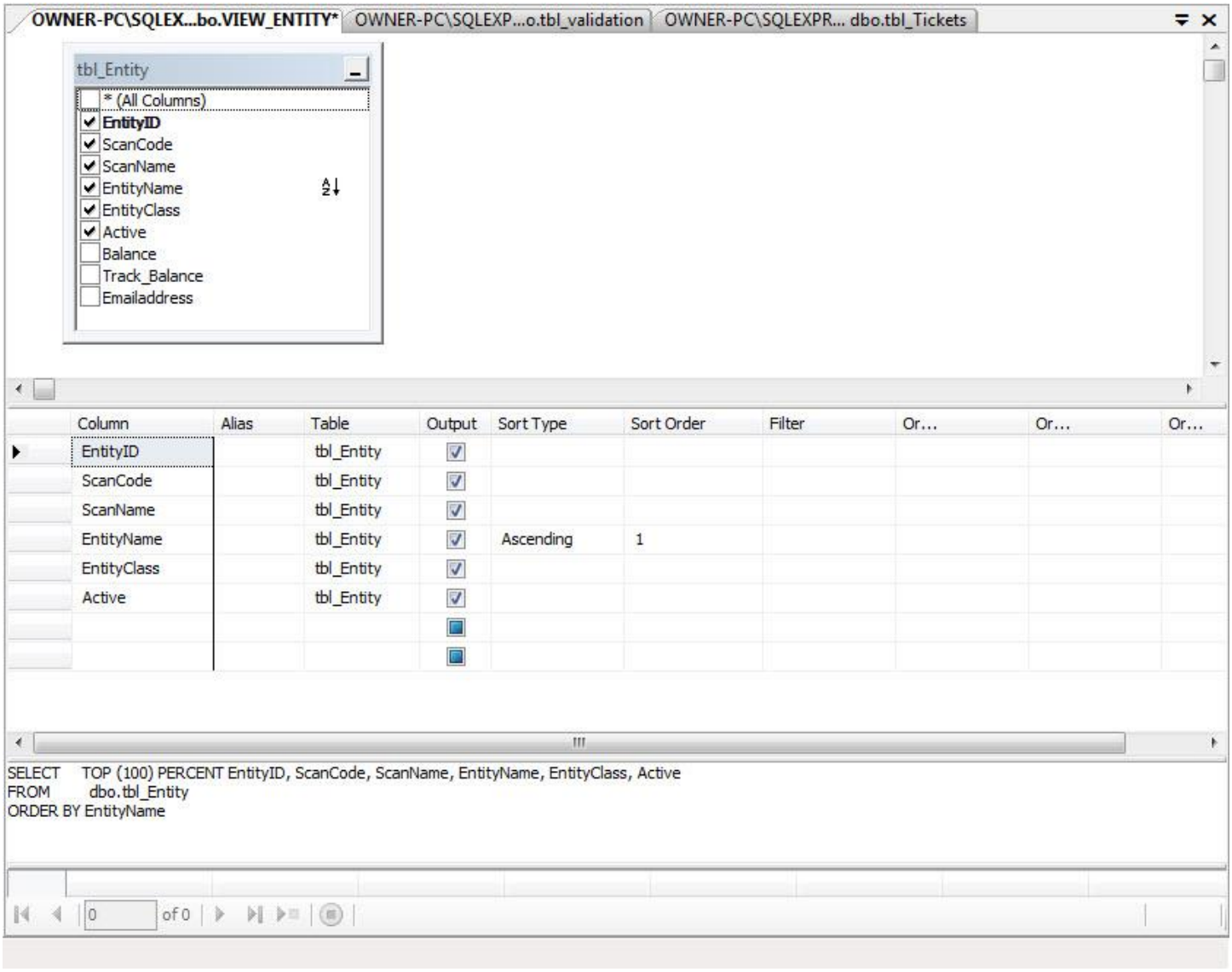
Validation Table

Column Name	Data Type	Allow Nulls
Merch_ID	char(3)	☐
Merch_Name	char(50)	☑
Type_Value	numeric(10, 2)	☑
Merch_Type	int	☑
		☐

System Views

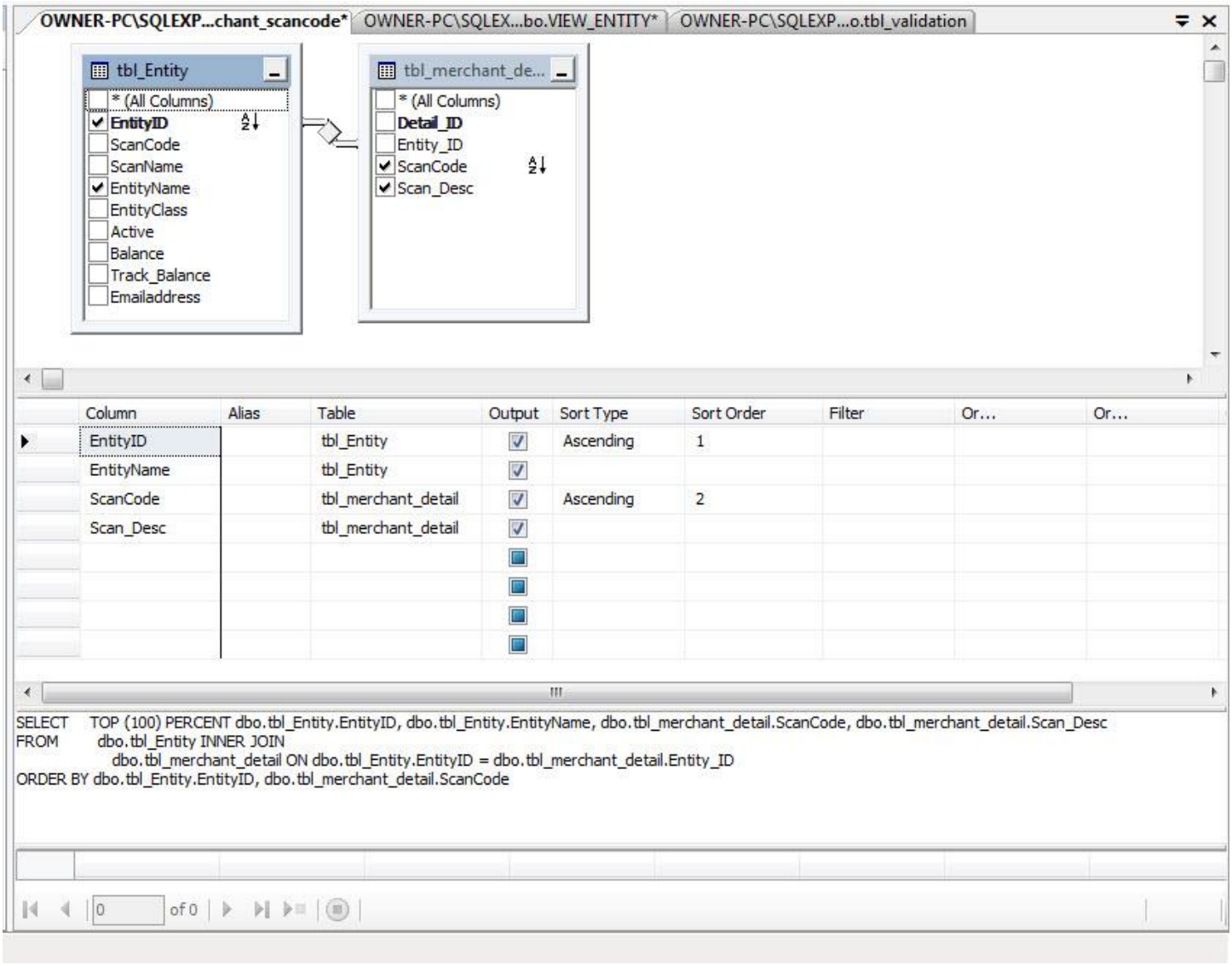
View_Entity

Entity View



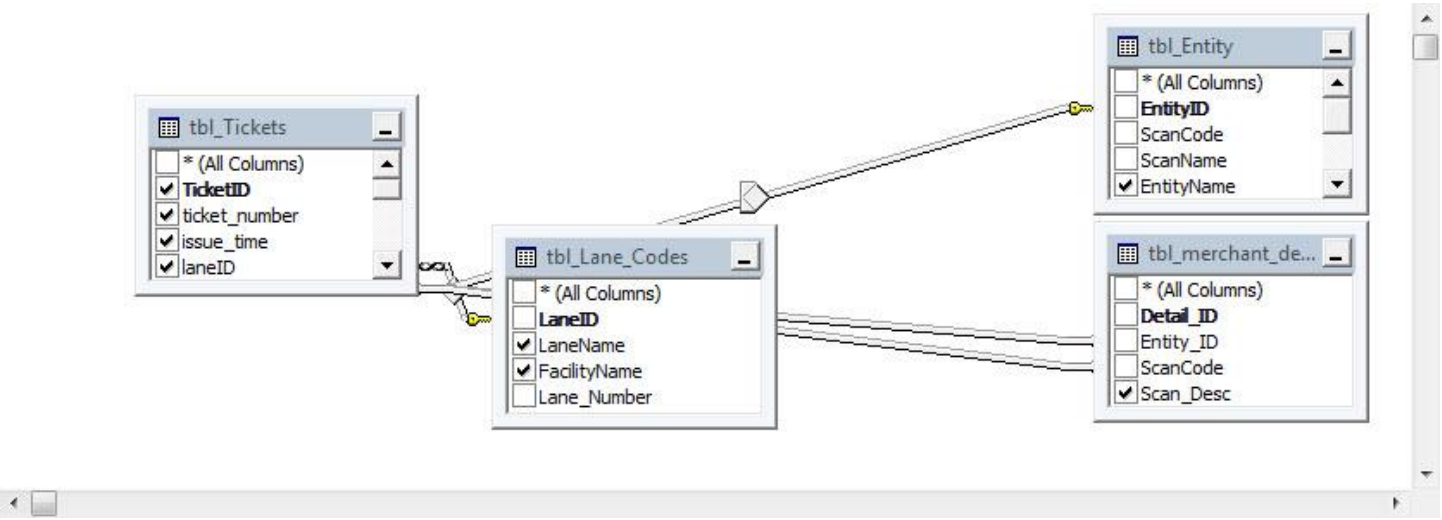
Vw_merchant_scancode

Merchant Scan Code View



Vw_ticket_lane

Ticket Lane View



Column	Alias	Table	Output	Sort Type	Sort Order	Filter	Or...	Or...	Or...
laneID		tbl_Tickets	☑						
TicketID		tbl_Tickets	☑						
ticket_number		tbl_Tickets	☑						
issue_time		tbl_Tickets	☑						
transferred		tbl_Tickets	☑						
EntityID		tbl_Tickets	☑						
Posted		tbl_Tickets	☑						
ScanCode		tbl_Tickets	☑						
UserName		tbl_Tickets	☑						
LaneName		tbl_Lane_...	☑						
FacilityName		tbl_Lane_...	☑						
EntityName		tbl_Entity	☑						
Scan_Desc		tbl_merch...	☑						
notes		tbl_Tickets	☑						
ISNULL(dbo.tb...	Validati...		☑						
ISNULL(dbo.tb...	fee_table		☑						
txn_time		tbl_Tickets	☑						
ISNULL(dbo.tb...	total_fee		☑						
			■						

```
SELECT    dbo.tbl_Tickets.laneID, dbo.tbl_Tickets.TicketID, dbo.tbl_Tickets.ticket_number, dbo.tbl_Tickets.issue_time, dbo.tbl_Tickets.transferred, dbo.tbl_Tickets.EntityID,
             dbo.tbl_Tickets.Posted, dbo.tbl_Tickets.ScanCode, dbo.tbl_Tickets.UserName, dbo.tbl_Lane_Codes.LaneName, dbo.tbl_Lane_Codes.FacilityName,
             dbo.tbl_Entity.EntityName, dbo.tbl_merchant_detail.Scan_Desc, dbo.tbl_Tickets.notes, ISNULL(dbo.tbl_Tickets.Validation_amount, - 1) AS Validation_amount,
             ISNULL(dbo.tbl_Tickets.fee_table, 0) AS fee_table, dbo.tbl_Tickets.txn_time, ISNULL(dbo.tbl_Tickets.total_fee, 0) AS total_fee
FROM      dbo.tbl_Tickets INNER JOIN
             dbo.tbl_Lane_Codes ON dbo.tbl_Tickets.laneID = dbo.tbl_Lane_Codes.LaneID LEFT OUTER JOIN
             dbo.tbl_Entity ON dbo.tbl_Tickets.EntityID = dbo.tbl_Entity.EntityID LEFT OUTER JOIN
             dbo.tbl_merchant_detail ON dbo.tbl_Tickets.EntityID = dbo.tbl_merchant_detail.Entity_ID AND dbo.tbl_Tickets.ScanCode = dbo.tbl_merchant_detail.ScanCode
```