

Rising IBM Mainframe Software Costs

By Kim A. Eckert, Certified IT Architect

Rising IBM mainframe software costs started getting the attention of high level executives some years ago. This was partially due to realizing the software inventories analysis was inefficient and limited. In addition, a third party company was hired to review IBM Strategic Outsourcing (SO) account's inventory. In other words, IBM was paying "green" dollars to save "blue" dollars!

In order for the team to become competitive and provide extra value to our Integrated Technology Delivery (ITD) accounts, I architected an automated system that merged data from several sources and made it easy for the technical support teams to verify the inventory. Once the reports were produced, my team would analyze the data and make recommendations for cost take out opportunities.

There were several issues surrounding software licensing and validation:

1. IBM only had tools that would report on what was installed on a customer's machine then that output would be matched up to what was actually licensed. This approach had benefits as in ensuring they are paying for what they use, but did not do the opposite - ensuring they are actually using what they are paying for.
2. The only place to find where a product was superseded by another was either Announcement letters or the Dawn report web page. The Dawn report lists all monthly license type software and their replacement if available. For example, it would show 5647-A01 OS/390 is replaced by 5694-A01 z/OS.
3. End of Support information was only available through Announcement letters or the Lifecycle Support web page. The Lifecycle Support page only allowed the information to be downloaded in XML.
4. Sub capacity eligible products and their attributes were on several different web pages and in the Workload Pricer (WLP) application. Normally, software is priced based on the full machine capacity of the CPU it runs on. Sub capacity pricing looks at a four hour rolling average usage over each Logical Partition (LPAR) on the system. For example, if a CPU had three LPARs: LPAR A, LPAR B, LPAR C and DB2 ran on LPAR C only, the customer would only pay for the four hour rolling average usage on LPAR C.
5. Within the Entitled Software (ESW) application, each report is separate. The four main reports needed are Inventory Detail, Order Backlog Detail, Invoice Detail, and Single Version Charge (SVC) Expiration Reports.
 - a. The Invoice Detail Report only displays software serial number with the amount billed. The problem with this is in a multiple CPU environment, the hardware serial number is what everyone understands and knows. A software serial number is a unique number for a specific customer that correlates a particular software product to a single hardware CPU serial number.
 - b. All reports are sorted differently making it difficult to see "like" software grouped together.
 - c. The Inventory Detail Report is difficult to review since the data usually spans multiple columns.
6. There is not a report that shows sub capacity eligible products and their attributes. The attributes state whether the product cuts specific system usage generated records or whether the MVS programmer must manually code it.

The scope of the project addressed all of the above concerns and included additional information such as highlighting products that were on SVC, Usage License Charge (ULC), backlog, and/or had three MSUs charged to it under sub capacity pricing. For accounts with a large number of licensed mainframe products, the manual administrative process (categorizing products, calculating discounts, identifying Single Version Charge candidates, listing sub-capacity eligible products, creating pivot tables, etc.) could take up to 120 hours. It was also easy to overlook a savings opportunity with such expansive data.

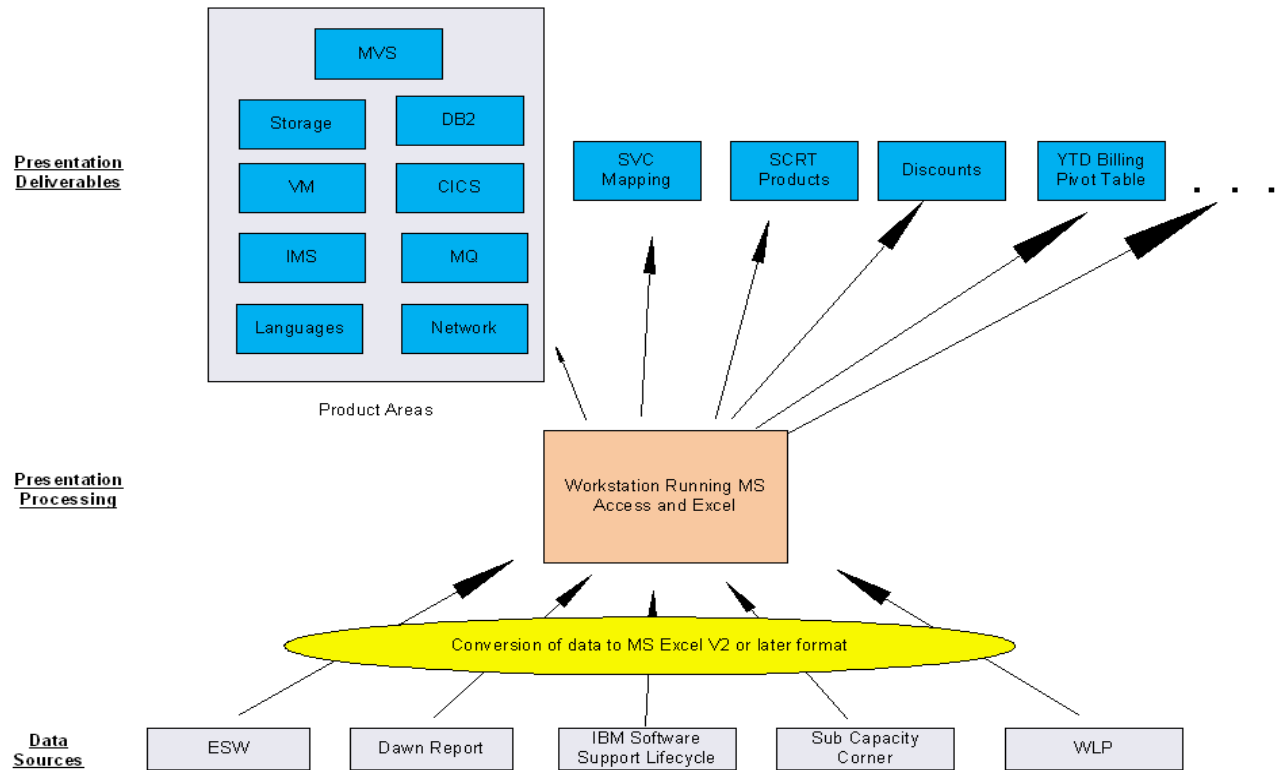
ESW is a Web based application that stores all IBM customers mainframe software inventory. It is available to IBMers and Business Partners worldwide who need to pull customer data. It records current, deleted, changed, and "in progress" inventory. "In progress" refers to software that has been ordered but it has not made it to the actual inventory because new or change orders are processed on the first of each month. It also houses all billing information (for the US only).

When my team and I first analyzed Integrated Technology Delivery (ITD) SO accounts, we only looked at the Inventory Detail Report from ESW. We would manually create tabs in a worksheet and move software products to their respective areas of responsibility. To alleviate that problem, the tool automatically parses out software products into mainframe system categories represented by individual tabs: MVS, VM, DB2, CICS, IMS, MQ, Storage, Network, Print, and Languages. This made it easier to identify licenses as "missing" (DB2 without Utilities Suite), "duplicate" (ACF/VTAM which is included in z/OS base), and/or "same function" (multiple versions of COBOL). The manual process took at least 40 hours per account to sort through depending on the size of the inventory.

The Inventory Detail Report Edge contains an enormous amount of data, spanning columns A through ER. The tool logic adjusts for changes in the number of columns and which column contains pertinent data since ESW modifies the report frequently and without notice. The ESW default Excel format is Excel V2. I had to write code to convert it to Excel 2010 workbook format so MS Access could process the data.

I coded the tool in MS Access and Excel using Visual Basic for routines where analysis requirements could be checked and validated via automation. The width (number of columns) and length (number of rows) are automatically calculated (these change by account and version of the report itself) so the headers, color coding, numbering of lines, and pivot tables can be accurately represented.

The tool automatically creates a maximum of 35 tabs, ten of which it parses out software products into mainframe system categories represented by the following: MVS, VM, DB2, CICS, IMS, MQ, Storage, Network, Print, and Languages. This makes it easier to identify licenses as "missing" (DB2 without Utilities Suite), "duplicate" (ACF/VTAM which is included in z/OS base), and/or "same function" (multiple versions of COBOL). With the tool implementation, there are no misses due to review oversights on applicable discounts, single version charge opportunities, sub-capacity eligible products, and various checks of licensed vs. billed products. Consequently, 40-120 person hours are saved per account (based on the size of the inventory) with a single click of a button.



This tool eliminated the sort and critique phases previously performed manually as first-level analysis on mainframe inventories. The tool has already led to significant retro credits on several accounts based on identification of ITD software discounts not taken. As of December, 2012, my team has saved \$30M with the use of my application. It also enables audit readiness since mainframe software licenses are validated. In addition, it serves as a single source repository of an account's mainframe software environment in a user friendly format for Delivery Project Executives/Project Executives, Asset Management Team, and technical support teams. Business and technical decisions can be made with efficiency and accuracy using the comprehensive data generated.