



## Converting IVM business Methodologies From Batch processing to Real-Time transaction Processing

### Long Range Goals

The primary goal of the Information Technology department will be the design and implementation of a data collection, administration and reporting service for the customers of IVM. The current technology utilizes a store and forward data acquisition method. This requires manual intervention and by its nature is slow and inefficient.

In a first effort to move away from this technology I will be working with Allan Brown (and other vendors) to design the current device and future devices to, in essence, "phone home". This will hopefully allow us to provide many new features:

1. Timely reporting
2. More detailed and accurate reporting
3. Better utilization of staff time
4. Focus beyond ensuring the completion of downloads
5. A restrictions methodology that will accommodate most customer requirements

Pursuant to that goal, the focus of the department will be trained on how to handle transactions in the real-time. This in turn will open up a whole new can of worms, such as how the current programming must change to accommodate a real-time transaction. As I see it this will have an immediate impact on LAN (always on) customers. The ultimate gain will be in the form of future customers and the retention of current customers, including those still on dialup.

### Real Time processing

In a real-time process we will need to identify at the machine the employee [employeeID], the machine [machineID], who the client is [clientID], what we want to vend [machineBinID] and when we performed the transaction [transDateTime]. The transaction process changes from a batch data collection to a Real-Time model using the current database design with modifications.

Process:

1. [Authenticate - Same as asking the employee to logon]
2. Key= employID | machineID | clientID ( also known as location )
3. <-> perform compare in database
4. ack = go (continue) otherwise stop *errormessage*
5. [Validation – Test the BIN selection, is employee approved]



6. Key= employID | machineID | clientID | binNumID
7. <-> perform compare in database
8. ack = go (continue) otherwise stop *errormessage*
9. [Allocation – Does the employee have rights to more than 1 or ANY for that matter]
10. Key= employID | machineID | clientID | binNumID | binNumallocQuanID
11. <-> perform compare in database
12. ack = go (continue) otherwise stop *errormessage*
13. Update transaction table with successful vend

### **User list Updates**

One of the other aspects of the overall customer database process that I have serious problems with is the client employee list update process, what we refer to as the userlist or sometimes called the “whitelist”. This process is out of touch with reality. What I have learned in the short 3 month span of employment with IVM is that IVM’s customers are the fortune 50, 100 and 500. We are dealing with literally hundreds to as many as thousands of employee’s. The method for updating the vending machine end user, the employee, must and will change. This change will take the shape of 3 different models:

1. A batch mode update in the form of an IVM standardized (CSV) formatted spreadsheet.
2. An internal web based individual employee form for adding, updating and deleting maintenance screen
3. An external web based form, customer driven, for individual employee add, update and delete maintenance screen. The end result will be submitted to an ICS rep for review for accuracy and finally sent to the update processor (the program for updating users).

In item #1, I refer to an IVM standardized format and that is exactly what it will take for this process to become efficient and effective. Does the US Government customize their EDI program to accommodate the thousands of tax paying corporate clients? The reality is the corporate CPA firms must customize their program to output tax information according to IRS EDI parameters. The program needs to be designed and developed as soon as, if not more rapidly than, the real-time processor. The accuracy and reliability of our product, the resulting IVM report, absolutely requires up to date and accurate client employee data.

### **Over all Impact from technology change**

Switching to a real-time system will not only have a serious impact on how information is processed it will also change how IVM does business. When we speak of real-time processing we are saying we are a 24 hour by 365 day per year operation. This means we have to take into account what happens when a server shuts down or a communication line is cut. Over the course of the next few months, with the introduction of real-time services,



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we must configure our SQL servers to be capable of replicating database tables from the co-location service to the IVM headquarters.

\*HotSite = Local co-location, 24x7x365 service provider that will host the IVM external DNS and a single IVM SQL server. Service provider to be determined.

The following will transpire in the course of the next few months:

1. IVM will contract with a local "HotSite" that will host the IVM external DNS.
  - a. Cost: \$1200 monthly reoccurring
2. IVM will contract with a high speed Internet provider such as COMCAST commercial.
  - a. Cost: \$125 monthly reoccurring
3. The HotSite will house an IVM procured SQL server.
  - a. Cost: \$5,500
4. The current "IVM-SQLSRV" database will be designed with replication, replicating the database with the co-location server.
5. The TBD HotSite will perform a redirection of a specific DNS address assigned as the IVM real-time external Internet account to the internal IVM SQL server.
6. IVM will procure an external DNS name and associated IP address for the sole purpose of real-time traffic.
  - a. Cost: \$16 annual
7. The IVM real-time name and address will be provided only to IVM clients. A security rule will be implemented within IVM and HotSite firewalls to accept only connections from IVM clients. This adds a highly protective layer of security.
8. The hotsite will monitor real-time connectivity with the IVM hosted SQL server. The monitor process will take the shape of a keep-a-live connection, periodically (pinging) querying the IVM database every 5 minutes. In the event of a loss of service whether it is from an unsuccessful ping or some disaster, the HotSite will immediately switch-over redirection to the internal SQL server.
  - a. Cost: TBD