Implementing IT Service Vision™: Experiences of a "Traditional" SAS Programmer

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Abstract

With the implementation of SAS Business Solutions, SAS programmers are faced with new challenges. Rather than developing new, fully customized systems, SAS programmers are installing packaged applications created by SAS Institute. This paper discusses my experiences implementing IT Service Vision™ software for a client. Areas to be discussed:

- installing IT Service Vision
- working with the interactive interface
- building and maintaining a performance database
- generating reports and executive summary
- outputting performance information to the web

Other areas to be covered include acceptance of IT Service Vision by loyal SAS/CPE® users, client/server solutions with IT Service Vision, and how a traditional SAS programmer prepared for the implementation of a Vision product.

Introduction

I was asked by a client to implement IT Service Vision on their RS6000® (a.k.a., a UNIX® box).

I had not ever worked with MXG® Software or SAS/CPE on either MVS or UNIX. I thought that this would be a chance to learn a new tool; and also see if I should feel threatened as a SAS programmer with the bundling of SAS products under SAS Business Solutions.

This paper will address issues that I ran into while implementing IT Service Vision.

Requisite Skills & Training

The project which was to begin in June, 1997 did not seriously start until November, 1997. It was difficult to decide on how to handle training. I was working through the first version of *SAS/CPE Software for Open Systems: Usage and Reference, Version 6, First Edition*, but was not having much success. It turned out that this was not the most recent documentation.

I noticed that a formal hands-on training course, *The SAS Business Solution for IT Service Delivery*, was to be offered in August, 1997 in my region. The class was almost canceled, but finally took off. This turned out to be a great resource. Although we were still working with the first version of IT Service Vision, it saved me many hours of working through manuals.

Since I am a big fan of SAS-L, I was planning on using the specialized listserv for SAS/CPE and IT Service Vision for basic questions. Unfortunately, the company that was maintaining the listserv has stopped doing so. This has left a void that is being somewhat filled by information provided by SAS Institutes web pages for IT Service Vision and also SAS Technical Support.

IT Service Vision is a repository for storing computer performance data which is generated from platform specific performance collectors that generally run in real time. IT Service Vision supports many collectors, which means that the collected data can be read with no additional SAS programming. If the collector is not supported, then IT Service Vision requires SAS programming to read in the data. This is called a generic collector. For this project, NetView® for AIX from IBM would be used as our collector. IT Service Vision provides full support of NetView.

NetView provides volumes of information about the open network, which in turn has created a whole new set of jargon that had to be learned. Since

measuring performance statistics on UNIX was new to the group that I'm working with, we were at a loss as to what metrics to turn on. SAS provided a list of suggested metrics to get started. I spent a considerable amount of time reading IBM manuals to talk somewhat coherently to the NetView administrator.

The IT Service™ Solution for Open Systems: Getting Started was an important resource in working through this project, including putting IT Service Vision into production. It is documentation provided with the software, and explains all of the processes that need to be in place before using IT Service Vision. This was the source that suggested metrics to use with NetView. (Before looking at this manual, I was given a book by the NetView administrator that was 1 1/2 inches thick of all the available metrics provided with NetView!) With release 2 of IT Service Vision, all of the documentation is on-line. No new updated manual was provided with the software.

The final skill required is some knowledge of your chosen operating system. For UNIX, this should include copying files, submitting SAS jobs (interactive and batch), and using scripts.

If NetView is not installed on the same node as SAS, then you'll need to learn how to work across different UNIX nodes. Note: SAS recommends that NetView and SAS not be on the same node. I had to connect to a remote host using ***telnet***, which meant that I lost my GUI world that I was accustomed to while running SAS. This meant that I got better at using ***vi***, a cryptic text editor that is available on all flavors of UNIX. I picked up many of my UNIX skills from *UNIX® for Dummies®*.

Installing IT Service Vision

IT Service Vision was installed on an IBM® RS6000® by the UNIX support group. AIX® is the operating system, and I would be emulating this environment with eXceed® 5.0.1 emulation software.

The installation of the software went very smooth, but the actual implementation of IT Service Vision was a little more difficult.

I began by following the steps mentioned in *The IT Service™ Solution for Open Systems: Getting Started*, which required checking for processes running on the NetView node. From there, I needed to work with the NetView administrator to begin collection of some simple metrics. SAS suggests collecting data for several days, before proceeding with IT Service Vision. The collection was started on a Friday, and my plan was to proceed the following Monday. Unfortunately, we ran into a few road blocks with IT Service Vision, Release 1 and also some internal policies, which resulted in my not getting to process the data into IT Service Vision for another month and a half. Thus, I started with more then enough data. Much of the delay was waiting for fixes that would become available with IT Service Vision, Release 2. We received our copy in early December.

I'll briefly describe some of the problems. None of these problems should reflect badly of SAS Institute or my client, since they are just glitches that occur with every project.

To grab the raw data file created by NetView, IT Service Vision runs a script to connect to the remote host using the ***rhost*** command. If you want this process to be in production, you need to have your logon identification and password hard coded in a file. Otherwise, you always have to be present to type in your logon identification This file should be readable only by the user (and of course root user), but many sites don't like having this type file around, including my site. It took several weeks to convince them of the need.

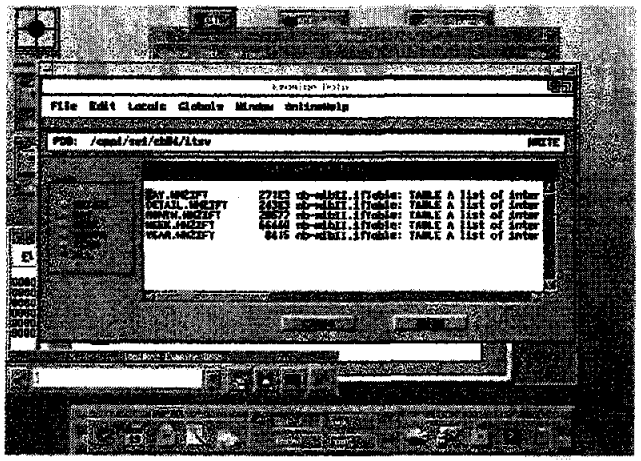
Most of the processing in IT Service Vision are done with SAS supplied macros. Thus, if you get an error, it usually refers back to a macro not processing correctly. When I tried to launch the new IT Service Vision, I kept getting a message that I was using the wrong macro. I was still able to launch the previous version. After spending a day or two trying to diagnose this problem, finally a call to SAS Technical Support solved the problem. We realized that I was calling the wrong macro library in my SAS autoexec. This was one of those errors that after it is found, you are mad at yourself for missing it in the first place.

After getting past the above, I tried to process the data for the first time. An error was found in a SAS supplied script that occurs only in AIX. An unclosed comment caused the error, but it should be noted that the script works fine in other flavors of UNIX. The error was fixed by SAS and e-mailed to me within 24 hours. I successfully processed all of the data that had been stored since the end of October to mid-December.

As of this writing, I'm currently putting this PDB into production, and will discuss successes and failures at my formal presentation. I'm also having the NetView administrator collect more metrics.

Performance Database

After the raw data is processed by IT Service Vision, a performance database (PDB) or performance warehouse is created. This is essentially a SAS dataset, and can be used by almost all PROCs. IT Service Vision is continuously summarizing and reducing the data by date and time stamps for analysis. Essentially the PDB is a SAS library, and the summarized data is members in this library.

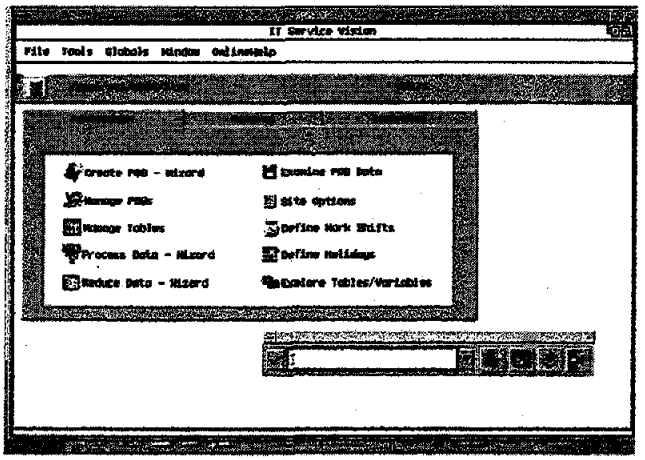


The lowest level of the PDB is **detail**, which is determined by the user. For our beginning PDB, we asked NetView to collect performance information every 15 minutes[1]. The next levels are as follows: **daily**, **weekly**, **monthly**, and **yearly**. Each level is saved for a limited rolling time period. For example, you could have detail data save for three days, daily saved for five days, weekly saved for three weeks, monthly saved for four months, and yearly saved for three years.

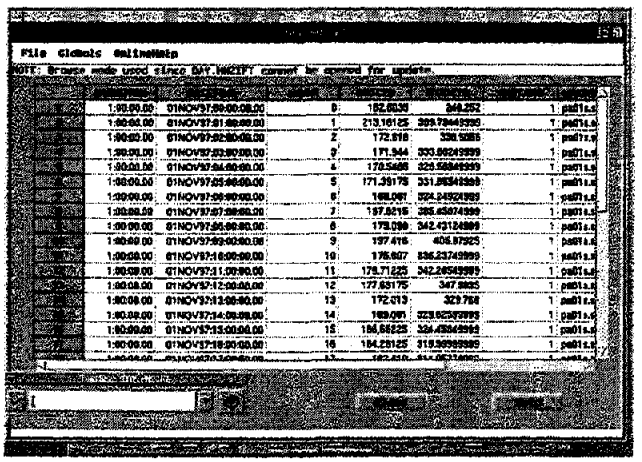
GUI Interface & Generating Reports

Both version of IT Service Vision had a GUI interface, but version 2 had an exceptionally nice one. Wizards are provided at every step to aid in the process. On-line manuals are also included with version 2.

[1] For those interested, I used the ifTable and the ifInOctets and IfOutOctets variables for my first PDB.



Viewing of the PDB has become much easier as SAS Institute improves their tools. Following is a display of my daily data. This looks and feels very similar to SAS/VIEWTABLE®.



Creating graphs and reports is as simple as point and click, but with a much cleaner interface than SAS/ASSSIST® provides. Examples will be shown in the formal presentation.

Conclusion

Obstacles

The hardest part of this project was understanding what metrics to gather in NetView. The NetView administrator wasn't pleased with the SAS suggestions, and so I had to spend more time trying to understand other areas that NetView can measure.

Advantages/Disadvantages of Being a SAS Programmer

Since I ran into a few problems setting up IT Service Vision, it seemed to be an advantage to have strong SAS skills. I spent considerable amounts of time working with SAS Technical Support, and had I not had my current skill set, this installation time would probably have been quadrupled. Thus, I don't feel too threatened as a SAS programmer with the bundling of SAS products under Business Solutions. Because computer data is extremely complex, IT Service Vision may be more difficult than other Business Solutions. Computer performance measurement requires specialization. I've meant decent SAS programmers who have spent their whole SAS career working only in this area. Most of them can probably be found at the CMG conferences.

One of the disadvantages of being a SAS programmer is that I wanted to see the source code underlying some of the macros provided. This doesn't seem to be possible.

Another area that may be considered a disadvantage is that I've spent a fair amount of my SAS career doing report writing with text and graphics, I often found myself tweaking the SAS supplied reports, either because I felt a need to do so, or I was asked by the folks I work for to do so. Often the supplied reports were probably good enough, and it is questionable how much time was wasted altering something that was probably good enough!

Overall, this has been a very exciting project. I have renewed respect for all of the computer people who manage the network.

Definitions

- **AIX/RS6000**-AIX refers to the operating systems and RS6000 refers to the hardware.
- **Generic Collector**-Performance data that is collected by methods not currently supported by SAS. IT Service Vision administrator must read the data with traditional SAS data step programming.
- **NetView**-A collector from IBM, similar to the collector, HP Open View®, provided by Hewlett Packard®. NetView provides extensive information about network activity. IT Service vision provides all of the requisite material to read the data.
- **PDB (Performance Database)**-SAS is now calling this a performance data warehouse, but seasoned performance measurement folks still refer to it as a performance database, which is the language of MXG. In either case, the data base provides staged data--detail, daily, weekly, monthly, and yearly--depending on groups needs.
- **vmstat**-An UNIX command that provides information about CPU activity. Information can be stored to an ASCII file that can be read later by IT Service Vision using the Generic Collector.

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