Case Study of Go Solutions Group Inc.

Company Information

Go Solutions Group Inc (GSGI) is a small company that provides Education Services and is based in the Lansing area. GSGI was founded in 1994. While the headquarters office is located in Lansing MI GSGI also has two remote offices located in Georgia and Arizona with a single representative in each state. GSGI has 21 employees currently and is a fairly small company but has a large presence throughout the United States with employees being sent to different states to provide training and consulting services.

More specifically the company develops web applications that are in turn used to provide school districts with software to enter information about education services. Eventually this information is used to bill Medicaid so each school can recoup reimbursements provided for these services.

One of the biggest selling points for the company's offerings is that the system provided to school districts requires no start-up costs. This results from not needing any internal technology support for clients. The system that clients interact with is completely web based and maintained by GSGI.

GSGI provides these services across the nation and has worked with school districts from over twelve different states. Each state has many specifications as to what kind of information needs to be provided for the schools to be reimbursed. Since these specifications tend to vary quite a bit from one state to another GSGI focuses heavily on providing each state with the tools they need to make this process as smooth as possible. In order to do this GSGI must constantly be updating the software that all of the schools interact with, and for this reason the company has a team of software developers that are constantly maintaining the web programs.

There are two main services provided by GSGI, GoClaim and Emac. GoClaim is a web program that allows school districts to record information about services provided to students. This information can be used just for record keeping or can be used by GSGI to bill Medicaid so the schools can be reimbursed. A majority of clients use this Fee for Service program, however GSGI also offers a second web program, Emac, to manage Time Studies. These studies occur on a yearly basis over the course of a predetermined number of weeks.

GSGI is not only a billing company, but also a software developer, and provides data hosting for clients and allowing this data to be utilized in many different ways (reports, updating, etc.).

IT Network

GSGI has divided its network into two main components. The first network is used to host services and store data related to the interactions of the clients and the web programs. This is the Production (PROD) network and consists of multiple servers that store all the information gathered through GoClaim and Emac along with any other data generated to keep the services functioning as intended. Outgoing email, a domain controller, backup of incoming email, external access to the office communicator, and a virtual server to store backup images are just a few of the services provided by the PROD network. These servers are all stored offsite by a separate company.

The other network utilized by GSGI is their Headquarter (HQ) network. This network is setup on-site at the office headquarters and managed directly by the company's Network Administrator. Many services are hosted by the HQ network such as incoming email services, file services, and development. Employees are able to communicate easily with Microsoft Outlook email services and a company hosted Communicator service to allow Instant Messaging. GSGI works almost exclusively with electronic documents and files in order to provide service to the schools. Doing so requires file services for Customer Relationship Management (CRM) so that files can be shared, transferred, etc. with ease and in a secure manner. This version of file service management allows the process to become automated for certain tasks if the client chooses.

IT Application

One of the most important applications hosted by the HQ network is GSGI's Development (DEV) environment. Since the development environment is such a large part of this network, the HQ network is often referred to as the DEV network. The DEV environment is a comprehensive replication of the PROD network and environment, providing the developers a platform to implement and test new features or bug fixes. By having a DEV environment these changes can be done without worrying about affecting the web solutions that the clients interact with.

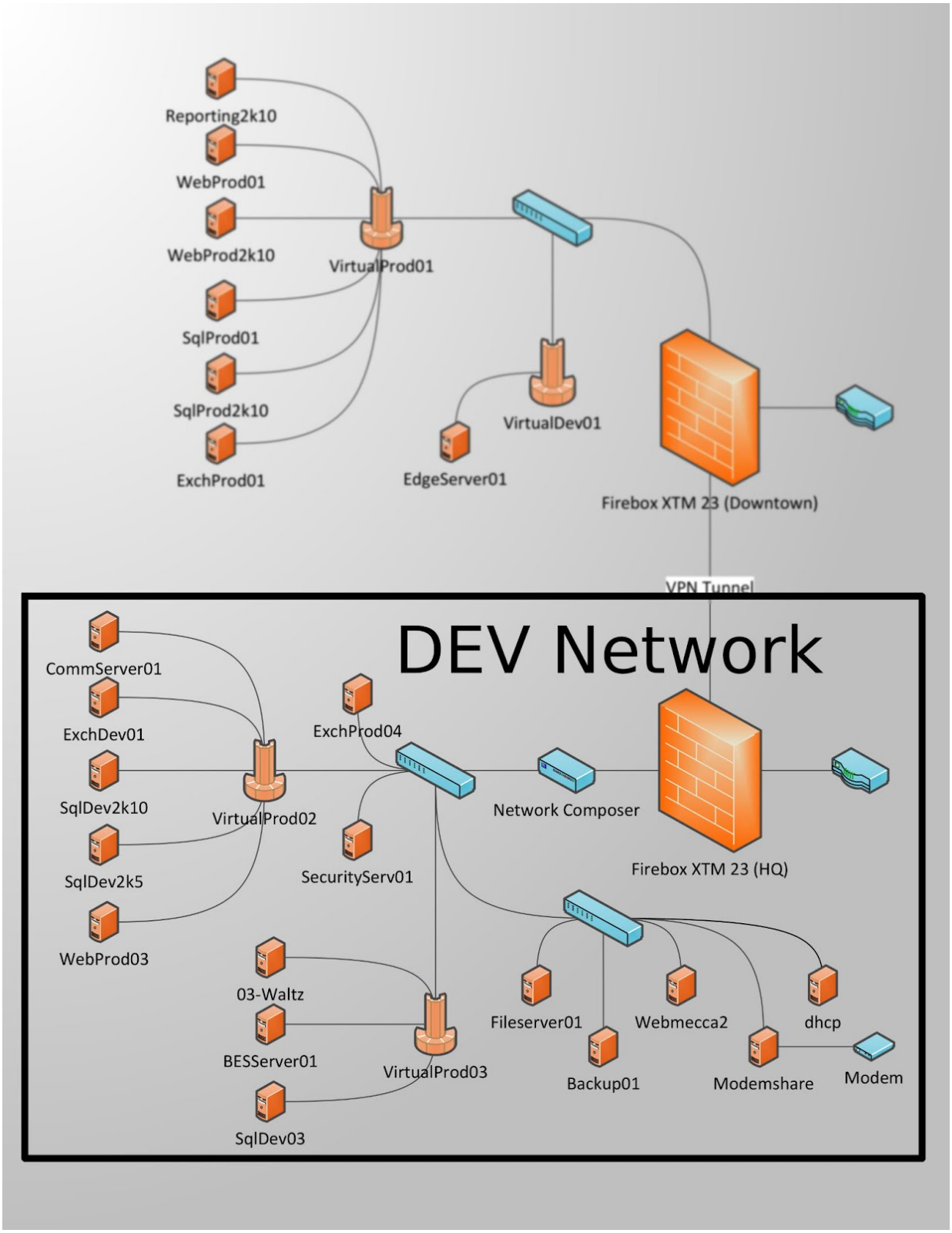
The SqlDev servers (2k10 and 2k5 from Diagram1) store all the data relating to the records that can be entered and stored from each of the web programs. Information such as user accounts, student information, provider information, service information, and much more. Providing this information in the DEV environment allows the developers to use real data to test new features and bugs that are being fixed. It is vital to the development process that practical data can be accessed, added and removed just the same as in the PROD environment so that once changes in DEV are rolled out to PROD there are no surprises from what was tested in the DEV environment. Also, the developers utilize a source control for the software, which keeps records and versions of all changes made to the software so that rollbacks are an option if a new feature causes problems that aren't easily fixed. Another tool used throughout the office is a piece of software called Test Track. The information and data relative to this software is stored on the Webmecca2 server. Test Track allows tasks to be structurally defined and recorded so that they

can be assigned to the right employee and the employee will have a record explaining what needs to be done and by when.

The WebProd03 server hosts the company's CRM software. This software is used to interpret files from clients to quickly update student information without everything having to be manually documented. Many school systems already have ways of documenting the services that need to be billed for, so GSGI has found ways to read these electronic records and integrate the information into their own services.

As mentioned before, the office has some communication software services that are utilized on a daily basis. The CommServer01 (Diagram1) is setup for internal use of the office Communicator tool that allows Instant Messaging. The ExchDev01 and ExchProd04 are used to route incoming email, email storage, and email account management. The BESServer01 is not in use anymore but was implemented to host Blackberry services back when the office had Blackberry phones.

The main reason for creating such a network is to allow the process for development to be as simple and smooth as possible. Developing and maintaining a software suite such as the one provided by GSGI requires a continuous dialog between the host (GSGI) and the customer. Once needs and requirements are discovered the software developers require a way to design and test solutions that will provide clients with the requested functionality. By having a DEV environment this process is made relatively simple since changes can be made and the interactions of the features with the system as a whole can be seen almost immediately. This coupled with simple and easy forms of communication allow the developers to find solutions for problems/requests as quickly as possible to keep the customers happy and to keep the company compliant with each State's requirements for billing.


Reporting2k10
WebProd01
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ExchProd01
VirtualProd01
VirtualDev01
EdgeServer01
Firebox XTM 23 (Downtown)
VPN Tunnel
DEV Network
CommServer01
ExchDev01
SqlDev2k10
SqlDev2k5
WebProd03
VirtualProd02
ExchProd04
SecurityServ01
Network Composer
Firebox XTM 23 (HQ)
03-Waltz
BESServer01
SqlDev03
VirtualProd03
Fileserver01
Backup01
Webmecca2
Modemshare
dhcp
Modem

Diagram1

IT Management Issues

Aside from just having an environment tailored for development, GSGI utilizes specific forms of IT to improve their business practices.

One of the most important advances of their IT infrastructure stressed by the Network Administrator is the use of virtual servers. Doing so allows the company to more efficiently utilize the server space they house and pay for externally. This has made the company more environmentally efficient, using less power since not as much hardware is used to provide service. Also, overall performance of the databases used to store all of the web program data has increased without needing to pay for prohibitively expensive hardware upgrades. Another benefit of this virtualization is the ability to create and store back up images of each of the virtual servers. Lastly, by utilizing a virtual environment the company has been set up in a way that allows employees to connect remotely to their workstations so that anyone can work from outside the office without needing a company laptop or desktop assigned to them specifically for out of office work.

Another way GSGI saves money is through research and finding IT solutions that not only provide a service or function that is needed, but also do so with as little investment as possible. An example of such an instance would be the company's handling of backing up data for the network servers. Instead of just using disk backup on Backup01, the Network Administrator has found that tape is much cheaper at the price of about $25 per about 1.6 TB.

GSGI uses IT solutions pervasively throughout the office so that each employee can be as productive as possible and so the team can be kept relatively small. All of the printers in the office are hosted on the Fileserver01 so that everyone can access them when needed and so it's not necessary for extensive wiring to connect all of the printers to each workstation. Scanners are also used to keep electronic documentation which is then stored on Fileserver01. The office also has a phone system like most other businesses, but GSGI uses the data network for this purpose rather than subscribing to traditional phone services. This is handled by the dhcp server in the DEV network.

Obviously GSGI takes part in a lot of data transmissions so there needs to be some sort of security involved in this process. That is mainly the role of the Network Composer. This device provides the Network Administrator a lot of control. The Network Composer monitors all incoming and outgoing packets to ensure security and uses this information to identify potential risks. Also, internal network usage is monitored. Each user has an account and the Network Composer records information about how each account uses the network and this information is stored and can be accessed whenever necessary. Lastly, the Network Composer provides the ability to block certain types of internet activities that are deemed to be unnecessary for workplace productivity.

However, GSGI does not rely solely on one device for security. The Network Administrator uses

a layered approach for the networks, monitoring services on multiple levels. Both networks are protected by a Firewall to help prevent security breaches. Also, various software packages are used to help monitor network activity and ensure there are no malicious attacks. Since the company hosts one network onsite and the other is external, there must be a secure way for data to be transferred between the two networks. This is accomplished with a VPN Tunnel. This tunnel controls communications between the PROD and DEV networks by using Internet Protocol Security (IPsec). IPsec authenticates and encrypts each IP packet to make sure that the connection between the two networks is secure.

The DEV network is managed by two Gigabit ethernet switches, providing very quick data transfers throughout the office.

Go Solutions Group Inc has used IT solutions extensively throughout the company even though the size of the company is not very large. Doing so has allowed each employee to increase overall productivity so the company doesn't have to greatly increase the employee base even though GSGI is gaining more and more clientele. By willing to invest in software and hardware solutions that provide benefits to the goal of the company GSGI has been able to stay highly competitive in the industry for the 18 years since its establishment.

References

Lum, Aaron. Personal interview. 19 Oct. 2012.