

Product White Paper  
IBM Director



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# Section One:

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## IBM Director And Point-of-Sale Device Management



## Introduction:

This paper was prepared after a thorough review of the IBM Director product was conducted in a controlled lab environment. Subsequently, this reviewer approached the vendor and end user communities to obtain feedback on its usability and reliability. The following sections describe the results of this research.

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Nicholas currently serves as a Senior Consultant with Accuvia Consulting where he is primarily responsible for working on client solutions and project management, as well as supplying technical consulting and implementation planning insight. His expertise in hospitality, foodservice and systems provides a unique perspective when addressing complex cross-industry and connectivity issues. Nick's experiences in the foodservice technology arena have provided him the opportunity to work with a variety of foodservice clients including Subway Franchisees, CiCi's Pizza and The Palm Management Group.

A graduate of both the Bahamas Hotel School and Florida International University, he has degrees in Hospitality Management, Travel and Tourism and International Hospitality. Microsoft Certifications include Microsoft Certified System Engineer, Microsoft Certified Professional, Microsoft Certified Professional + Internet, Microsoft Project.

## Part One: Point-of-sale as a Value Proposition

Across industries there has been a prevailing trend toward belt tightening and intense focus on bottom line. Never has this been more evident than in the highly competitive, tightly controlled, hospitality industry. Operators have long taken a route of cautious expansion, cost justifying all capital expenditures and defining processes to insure they add value to the enterprise, stimulate sales and/or reduce costs.

The investment that operators have made, and continue to make in technology represents this point well. Point-of-sale system hardware, software and



supporting infrastructure constitute a substantial technology investment. As information is the lifeblood of modern management, it generally has not been difficult to cost justify the purchase of Point-of-sale systems with data supporting arguments of faster transaction

processes and enhanced management reporting. These improvements can translate into better service levels, reduced waste, lower inventory costs, tighter payroll control, more accurate reporting and better decision making.

Total cost justification however, must consider all aspects of the system. Often neglected components of the Point-of-sale system are management of the entire enterprise of physical assets, access control and support for end users. These management and support issues are crucial aspects of system maintenance for many reasons:

- Insure integrity of the data stream;
- Maintain total system reliability;
- Minimize labor costs associated with troubleshooting device problems and overall system maintenance;
- Reduce user errors;
- Software license compliance;
- Maintain inventory of devices;
- Minimize impact of turnover of technical resources;
- Continued system integration for total enterprise reporting.

Additionally, within each operating unit, reliable systems with consistent functionality are integral to the harmony and security of each unit's operation. Faulty or failing equipment can lead to frustrations among the service and management staff, a slow-down in order fulfillment, breakdowns in cash control procedures and ultimately lost sales and higher costs. When in-store technology has failed, waiting for an off site support person is not a cost efficient option. Delays in service can contribute to a loss of confidence in the corporate initiative and lead to moral issues which ultimately result in unacceptable turnover levels.

Maximizing the efficiency of the Point-of-sale system makes good business sense. While virtually all systems are sold with some level of vendor support, and are sometimes backed up by third party support agreements for help desk and training, at the end of the day it is the responsibility of the host organization to understand their systems and to have some capability for maintaining them and for monitoring their performance.

### **Built for Management**

Not just in the foodservice industry, but also in the general computing world, the various manufacturers have sought to provide more than just raw computing power in their products. As a value proposition they have targeted the whole issue of device management as a key feature set that can lower the cost of ownership. Recognizing that many of the products operate in a networked environment, developers have added functionality that allows the administrator to remotely manage and monitor devices across the network. The advantages of this capability to the administrator are many and serve to reduce administrative costs and increase system stability. Some examples of how remote management can lower the costs of device ownership include:

- Reduction in system downtime by allowing the administrator to be alerted to potential problems before they occur so corrective action can be planned;
- Reduction in travel costs as technicians do not have to travel to a remote site to perform system repairs, upgrades or device reconfigurations;
- Increase in return to service through remote control problem solving;
- Improvement in help desk support response time to get a user back to a productive state faster;
- Improvement in training through system remote control and monitoring to shorten learning curves for new hires and retraining for new system procedures;
- Reduction in charges from outside support technicians through the use of built-in troubleshooting capability.

Other feature sets can include the ability to inventory all devices on the network. This can be an invaluable tool for gaining an in-depth knowledge of the configuration and capabilities of the devices on a network. Having this information can aid in capital budgeting, planning for system upgrades and assessment of existing system capability beyond the obvious value of accurate asset tracking.

### **Introduction to IBM Director**

While many of the major hardware vendors offer some limited monitoring and management capability with their systems (HP with its Top Tools product and Compaq with its Insight Manager), IBM has raised the bar by launching the IBM Director (IBMD). The breadth of the IBM product line has allowed them to offer a management solution that can encompass virtually all of the devices on the network and tie them together into an easily managed whole.

IBMD is a server-based device monitoring and inventory tool that works with agent software that the user can install on any Intel-based PC or device. The combination of agent and server program allows an administrator to not only be made aware of ongoing processes and device activity, but to also obtain a complete inventory of device components and have the power to take control of a device from a remote location. In terms of functionality it is perhaps the most far-reaching device management program offered as a free management tool.

The IBMD and its associated agent programs are offered free of charge with the purchase of any IBM series server and can be used free of charge on any IBM device. Unlike many of the third party remote control solutions on the market the IBMD offers a very complete and powerful system management and monitoring tool. It is very similar to the company's enterprise class system management product, Tivoli, but with a much easier installation procedure and an intuitive interface that makes it well suited to small and mid-sized companies that have limited IT capabilities. The smaller companies that often do not maintain more than one or two people dedicated to the management of the company's systems are the companies that will benefit from this kind of tool the most. Foodservice operators maintain a strong focus on the quality of food and service in their establishments with a growing recognition of the IT elements of the business. As such limited resources are often delegated to this area; it becomes very important that they maximize the productivity of what resources they have by using every tool available.

In an all IBM environment the potential for savings can be considerable. As an example, the most common remote control product on the market is PC Anywhere. The server portion of the program can list for approximately \$150 and each client license for \$40. Consider this scenario using PC Anywhere with approximately 25 units, each with seven Point-of-sale devices and one store level server to drive the points of sale terminals, a fairly typical setup. This translates to:



Restaurants

25



Store Servers

25

\$40

\$1,000



POS Devices

175

\$40

\$7,000



Corporate Servers

1

\$150

\$150

*Total Savings \$8,150.00*

In this same scenario the cost of obtaining the same functionality using the IBM Director with IBM devices would be \$0. Of course, the existing cost of licenses cannot be recovered and do not expire, but going forward the transition to the IBMD would save that client on new additions as they expand their company.

## Case Study



InfoGenesis is a prominent vendor of Point-of-sale solutions for the hospitality industry and an example of an early adopter of the IBM Director functionality. The company offers both stand-alone systems and large integrated Point-of-sale management systems as well as an application service provider (ASP) based Point-of-sale service. Some of its larger foodservice installations can be found in the mega-resorts along the Las Vegas Strip. Dave Konieczny, the integration manager at InfoGenesis, was looking for a way to reduce the cost of



managing and troubleshooting client devices for the InfoGenesis ASP model. Although it is an ASP (application service provider), InfoGenesis places the programs on the Point-of-sale device making it a fat client, as opposed to a thin client where the program and functionality relies on a connection to a remote server. In this way Konieczny's setup and management problems and concerns mirror those experienced by operators with distributed devices and a centralized maintenance. Konieczny had been using PC Anywhere to provide remote support, but the projected growth of the business and competitive nature of the business made him look for a cheaper way to provide high quality service. Because they are an IBM shop, it was natural for them to try the IBM Director.

After field-testing the product against the PC Anywhere solution they had in place, InfoGenesis decided that the functionality and ease of use made the IBM Director a suitable remote control solution replacement. Functionally, it worked much the same way as PC Anywhere, so no time was lost learning the new solution and it was able to perform equally well in low bandwidth situations. The needs of the ASP effort did not extend to the remote monitoring capabilities of the IBMD, but they focused on the flexibility provided by the Web-based remote access the product afforded support technicians. In this instance the need to reduce the total cost of ownership and support for the field devices, coupled with the already installed base of IBM equipment, came together to offer a very cost effective solution to the divisions support problem.

The problem of device management arises whenever a small network administration staff must support many devices that are spread over a wide area. Operators of high volume and high ticket environments cannot afford to have their systems go down. Neither can they cost justify the expense of supporting a large IT staff to have someone available to travel to a remote device for support. Such was the case with one of Accuvia's former clients: the Sandy Lane Resort in Barbados. They, like many organizations, have a

collection of servers from various manufactures that drive the IBM SurePOS Point-of-sale terminals in their foodservice and retail outlets. To address the need for remote administration, they utilize Microsoft System Management Server, PC Anywhere and other remote control products, a solution that is working for them. “Had the IBM Director been available at the time of the installation we would have had no hesitation in utilizing it as it could have provided the ability to perform many of the same functions as the existing solution but at a fraction of the cost and with a single unified product.” The example of Sandy Lane is illustrative in that it shows the need for remote administration and monitoring tools to keep costs inline and increase productivity.




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Accuvia’s review of IBM Director preceded broad distribution to end users in the foodservice and hospitality markets. Use at the product developer level was well underway. The experiences of InfoGenesis highlight the success they have had implementing the remote administration and control functionality. Success in this instance is measured by the cost driven factors comparing IBMD to other remote administration tools implemented in the past. Actual live field testing of the product’s capabilities by different size organizations and in different operational environments will, over time, bear out the sustainability of the product. Drawing as it does from the Tivoli Director; it certainly has the heritage of a robust management solution

## S e c t i o n T w o :

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### Features and Possibilities

## Part Two: Features

As previously stated, the IBMD operates as more than just a remote control product. It has a rich feature set that can work to increase the productivity of the IT support staff without requiring a lengthy learning curve or highly specialized knowledge, although some experience in systems and computer networking is helpful. The product is more on the order of a Microsoft System Management Server, or Tivoli management program in that it can allow a central site or administrator to monitor, as well as manage, all of the PC-based devices on the company network.

The figure below illustrates the main console screen. The explorer-like triple pane display has a familiar user interface and lists all of the various tasks and capabilities that the system offers.

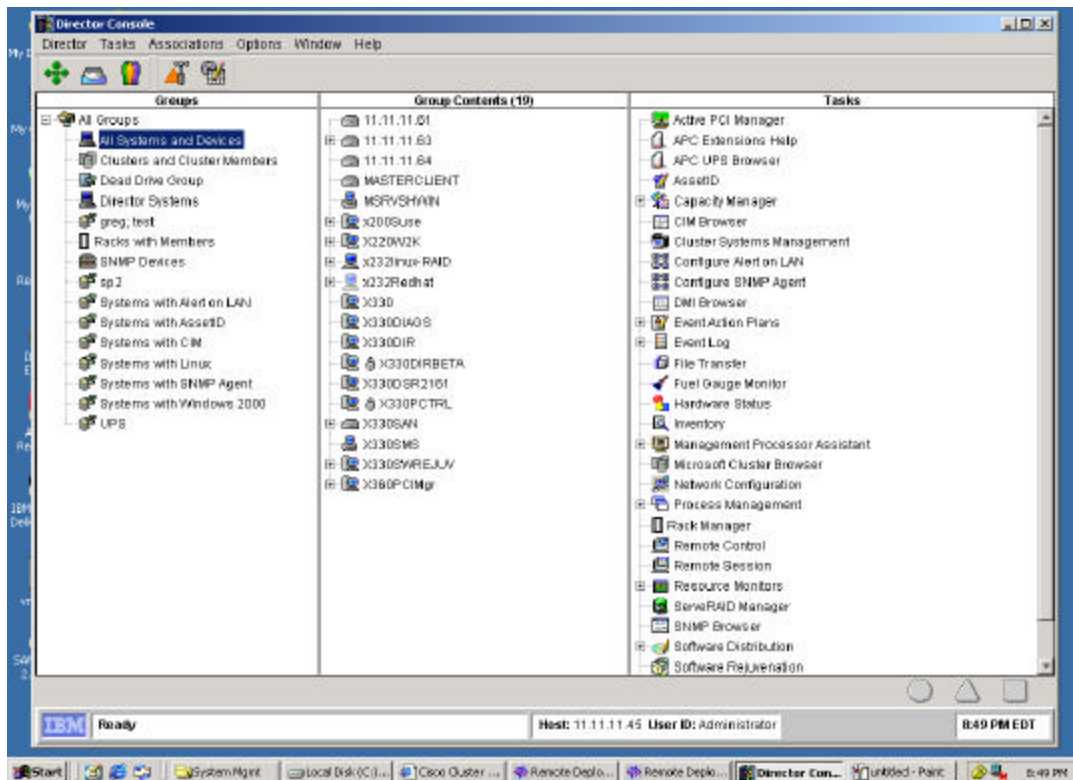


Figure 1. Main Console

The left most pane displays the device groupings, which can be user defined by creating a group and dragging and dropping members into it from the “All Systems” group that the program has discovered. The central pane lists devices that are included in the group selected in the left pane. The right most pane displays the various tasks, system jobs and queries that IBMD can perform against any selected device or group of devices.

The program is comprised of three main parts or components. There is the Director Management Console that is the graphical user interface from which all of the administrative tasks are performed. This is a Java-based application that accesses all of its data from the server it is attached to.

The Director Server is the second component and the brain of the system. The Director Server is also a Java-based application that houses the basic logic of the system and handles tasks such as discovery of agent enabled devices and construction and maintenance of a SQL-based database of device data.

Managed systems are the name given to systems and devices that have the Director Management agent installed on them. This is a program that runs as a passive application. It is the agent data that the Director reads and reports on.

With the Director, a central office can perform the following tasks:

1. Inventory management- A very detailed and granular inventory of every managed device can be obtained and reported on. Data can be exported to an Excel spreadsheet for incorporation with other programs or allow the user to manipulate the information in any meaningful way.

2. Remote control- Any system can be remotely controlled from the Console. The functionality is very similar to PC Anywhere in this respect and control can be set to ask for permission or to force control of the remote system. An additional feature of the remote control option is to operate in the command line, a non-GUI connection. This is useful for situations where line speed is slow as the connection has less overhead and can be more responsive.
3. Resource monitoring- All running processes on the managed systems can be monitored remotely and alerts setup to notify an administrator or manager if some aspect of a system goes down. A nice twist on the resource-monitoring feature is the ability to set custom alerts and monitoring schedules to send a message if an event does not happen. For instance, if a backup program failed to run. The various permutations of scheduling event starts and stops and resource monitors are extremely flexible.
4. Event management- The system will allow the administrator to view the event logs on the managed system, and when used in combination with the resource monitoring and alerting features, can be made to either notify a tech of an event or perform some automatic, pre-programmed action in response to an event.
5. Program Fix and patch distribution- Software patches can be setup on the server and pushed out to the managed devices either on command or on a set schedule. A nice refinement to this feature is that the system is sensitive to time zones and can correct for different time changes over geographical areas.

The add-on server extensions module extends the functionality of the Director to performance monitoring and allows the system to work with counters to track such key system indicators as CPU utilization, Hard Disk Drive utilization, memory usage and other important counters that can be used to determine the health of the managed device and provide indicators of either the need to upgrade the device or an impending device failure.

An example of the kind of detail the Director can provide on managed devices is illustrated below:

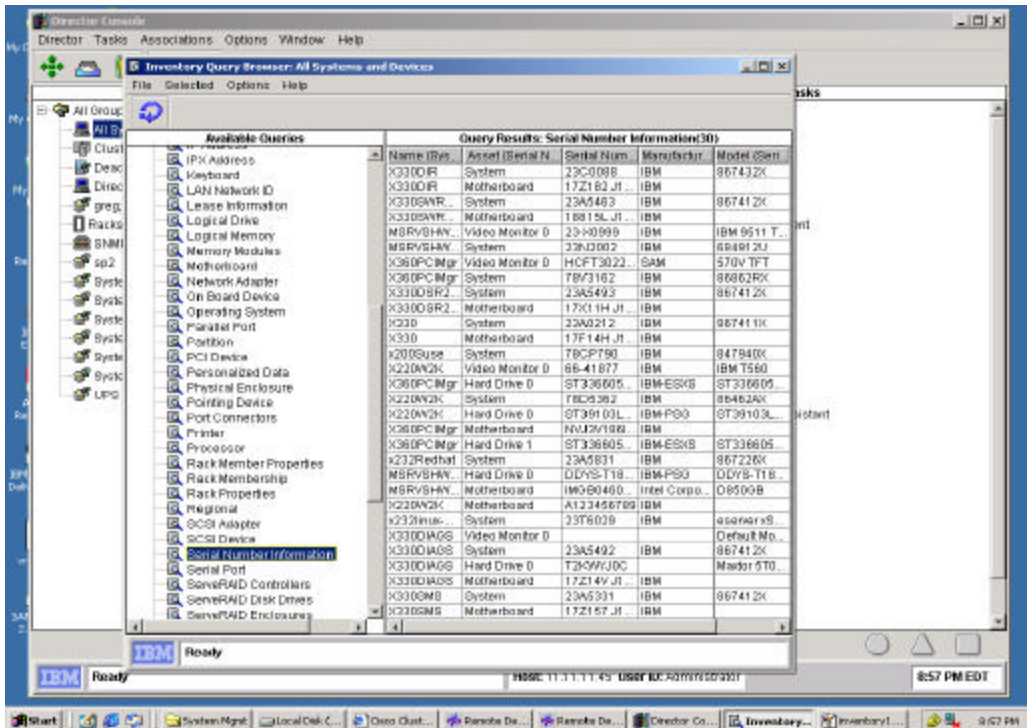


Figure 2. IBMD Device Inventory

As with all of the features of the Director, inventories can be for one device or a group of devices. This is especially useful when a company may have various device types on their networks, or devices of varying capacities and configuration. Putting them into groups and inventorying them by device type makes managing the devices very easy.

Remote control, perhaps the most widely used feature of any network administrator, is consistent with the overall ease-of-use and largely standard interface and operation. The illustration below shows a typical remote control session.

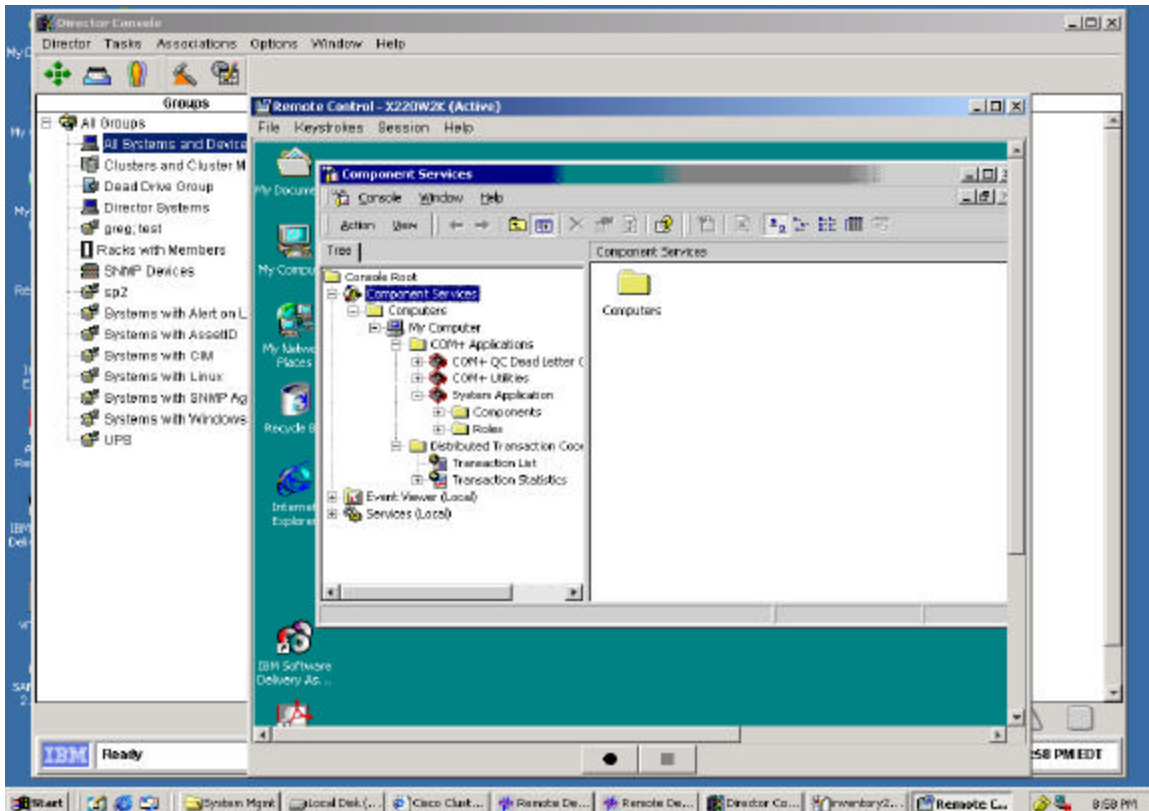


Figure 3. IBM Remote Control

The only major limitation to the remote control feature is that the console can only connect to one device at a time.



Remote monitoring and remote alerting, when used together, offer a powerful tool for overtaxed IT administrators to control their systems and become more proactive in solving problems and heading off disasters. With remote performance monitoring, the user can set any one of a number of counters to watch over device activity and log results for future review.

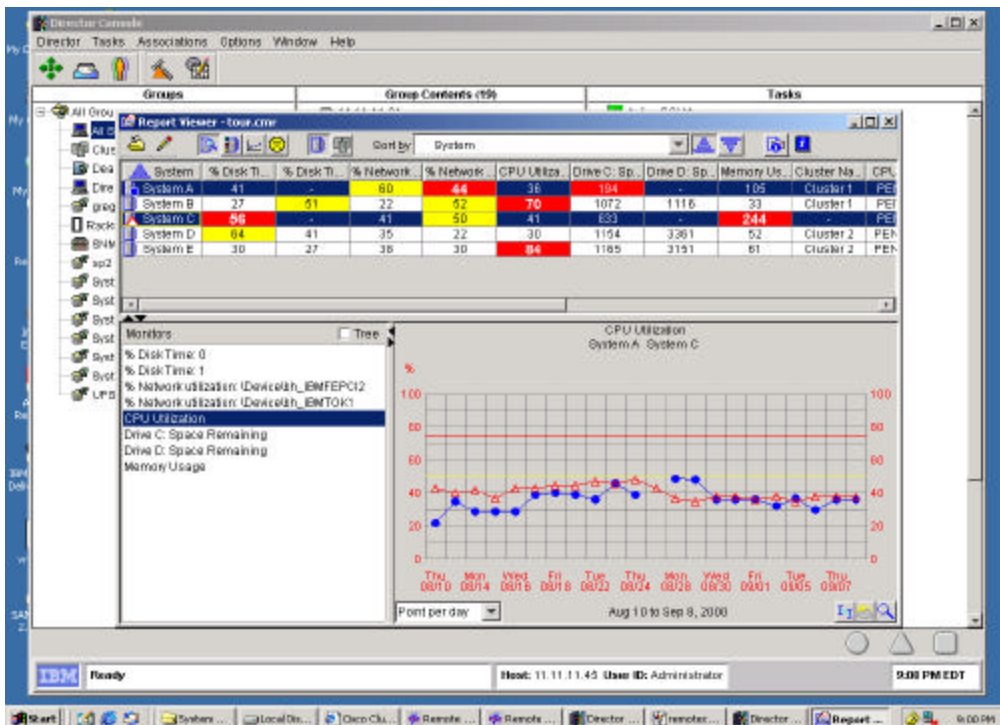


Figure 4. Remote Device Monitoring

When coupled with user defined alerts the system can be made to notify someone via pager or e-mail that a problem or condition has occurred that requires immediate attention. In the two screen shots below you can see the clarity of the displays and get a feel for how flexible the system can be made to be.

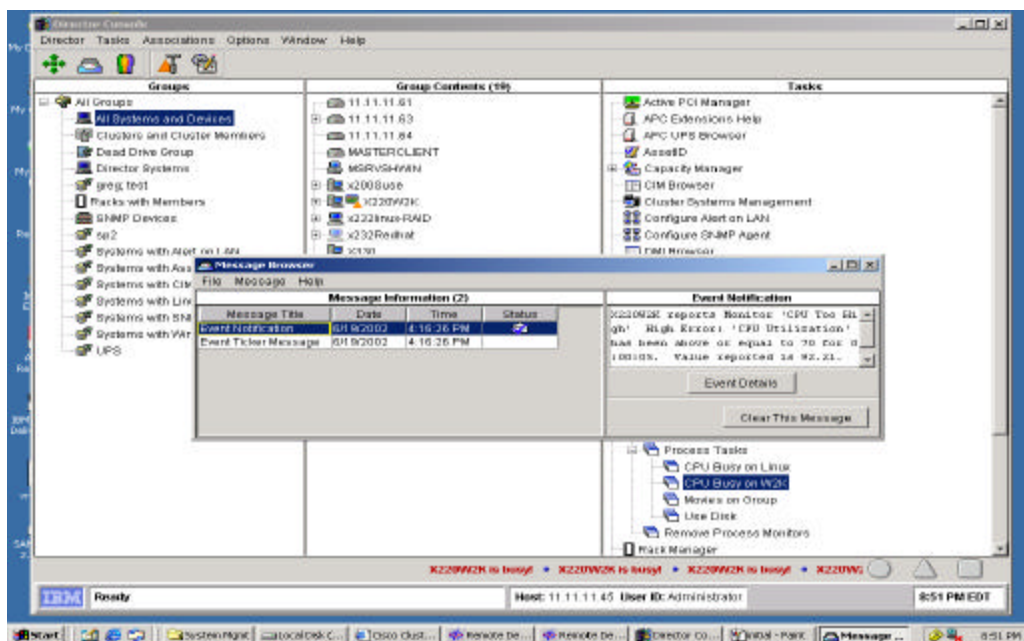


Figure 5. IBMMD Alert

The software deployment feature of Director will enable applications and system upgrades to be installed and administered from the central location. This capability can have a huge impact on the time and resources of the device maintenance effort. Gartner Group, in their September 1997 report *Lowering Software Distribution Costs with ESO (Electronic Software Distribution) Tools*, estimates a savings of between 52 percent and 87percent in a three year period over manual software distribution. This translates to between \$645,000 and \$1.39 million in a 2,500 PC environment.

While the majority of the foodservice users may not realize that kind of return, the evidence is clear that substantial savings are to be realized from having a centrally managed tool administer the devices on a network rather than either physically visiting each site, or relying on the limited IT resources in the field.

When you put all of the features together and create a policy for managing the devices in your business, IBM Director can allow a small organization to exert a higher degree of control over the business information system without a high financial investment. The savings in time and increased power to act proactively should reduce downtime, improve system stability and remove many of the expenses associated with device maintenance.

## S e c t i o n T h r e e :

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### Additional Considerations

## Part Three: [Final Considerations](#)

No system is perfect and the IBM Director is no exception. While the system is available free for use with any IBM device, there is a charge for managing and monitoring non-IBM devices and the server piece. In a non-IBM environment, the Director is a chargeable add-on product for both the server piece and for any non-IBM client device to be managed. The good news is that established charges recognize the prevalence of this scenario of mixed devices in the marketplace. The IBM Web site currently quotes the IBM Director Server piece at \$595.00 and a license cost for each non-IBM managed device of \$19.00. Most environments have a mix of manufacturer's machines in them so expect to have some cost associated with a general rollout of the product.

To institute the Director as the primary tool in your network will require the installation of the agent on any and all devices to be managed. This can be a very large task when converting large networks and will require the use of an existing remote control program if you want to centrally deploy the agents. At worst, it may require some manual installation process at the remote site (i.e. distribution of auto execution CD's.) Usually this is not an insurmountable challenge, but be aware that costs will be associated with it and should be figured into the overall deployment expense.

Perhaps the biggest consideration to make is the system requirements that allow the Director and its component parts to run. The Server component is a very large program and demands plenty of system resources to do its job. Expect to dedicate a server machine to run the Server component with a minimum of 256 RAM, a fast processor and at least 600 MB of free disk space; more if all the server extensions are included and you decide to use your own database. The clients are less demanding requiring only about 30 MB of free

space. They run as a service so the faster machines that are in use, such as POS terminals today, will not suffer any degradation of performance once the agent is installed.

The need to pay a nominal fee for each non-IBM device, the requirement to dedicate a server to house the program, the effort to fully deploy it and some of the limitations make the system more costly than the “free” appellation implies. However, in terms of value for the investment and usefulness as a tool to help a small or medium-sized operator obtain large system management capability to better control a network and reduce costs, the IBM Director is well worth the time and expense to setup and deploy.

## Summary

The ever increasing number and complexity of the systems that we use to help run our businesses have forced IT management to seek effective tools to control the growth of IT costs and maximize system utilization. Vendor relationship management can help to supply the network of outsourced support services that operators can use to provide coverage for many tasks. Building a suitable network infrastructure and choosing the best equipment for the implementation can help make management of the systems easier and less costly. At the end of the day however, these are strategies that are reactive to system disruptions and failures. Damage has occurred, losses of some type and measure have been sustained and the focus is on mitigating further loss or damage. Today this is an unacceptable situation.

Successful management of any business strives to be forward thinking and to plan for eventualities before they happen. We develop forecasts, monitor sales and cost figures to spot potential opportunities and troubles in advance so that corrective action can take place before any damage can be sustained. In short

we try to be proactive in managing our businesses. Our systems deserve nothing less. Prudent systems management requires that the various systems and devices that form the information backbone of our business receive the same attention as other areas of the operation. This means that they need to be monitored on a regular basis and control mechanisms put in place that allow for corrective action to take place in a timely manner.

The IBM Director is a tool that can allow a business to exert a large degree of control over the various systems on the network in a cost effective manner. It provides all of the basic functionality a small to mid-sized enterprise requires to take control of remote systems, monitor performance, inventory assets in the field and automate programmed responses to user-defined events. The user interface and extensive help features allow for an ease of use and short learning curve which make it an ideal choice for companies that have limited technical capabilities or resources. In an all, or mostly, IBM centric environment the acquisition cost of the product is very small as the agent licenses are included as part of the SurePos series point-of-sale terminals and the console and server portions are included with all xSeries IBM servers. Non-IBM devices that will be managed by the Director require a client license as would a non-IBM server, but the price points are competitive. Deployment costs for hardware are also modest as the system requirements call for only one small, dedicated machine to act as the Director server. Additionally the scalability of the product makes it a lasting investment that can grow with the needs of the organization.

For the small to mid-sized company that wants to get the most out of a limited IT budget while recognizing the need to become more proactive in the management of the systems it has deployed in the field, the IBM Director is

worth investigating. If the environment contains any IBM equipment, the value proposition increases, as each piece of equipment can automatically become a managed device without having to purchase any licenses. In environments of mixed manufacturer's devices, the IBM Director provides a competitive alternative offering many powerful system management features in an easy to use package.