



Time and Attendance White Paper

Distributed Time and Attendance Systems



Enterprise Time and Attendance Systems

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Overview of Time and Attendance Software

Time tracking is one of the most time consuming and costly overhead functions in many organizations. Time tracking can be automated. The right type of time and attendance software system will yield the best results. This white paper reviews the issues involved with deploying time and attendance software via Windows and Web-based user interfaces.

Choosing the Right Time and Attendance Software Solution

Selecting the right system to automate your time tracking needs is not a simple task. There are many factors to consider besides whether the system is web enabled. Issues such as the types of calculations the system performs, the ways that data can be collected, the technology and how the data is interfaced with other systems are all important considerations in choosing time and attendance software.

For a more in depth look at the issues involved in choosing a time and attendance software package, see [Choosing a Time and Attendance System That Meets Your Requirements](#).

The High Cost of Software Deployment

Smart technology managers have come to realize the high cost of deploying software to desktop computers. Time and attendance software, because of the need for wide distribution presents an especially challenging problem. The traditional Windows approach of installing software has the following problems involved:

- Software must be installed on each desktop. Unless an automated system or networked-based installation is used, an administrator must manually install on each machine.
- Software upgrades are problematic. Software that changes frequently must be reinstalled on each desktop.
- Network-based installations can be difficult to upgrade if users are running the software on a 24x7 basis.
- Conflicts between software systems are very common. Installing a new package can prevent another system from running.
- Desktop installation can require substantial resources on each machine in terms of disk space.
- Desktop configurations are subject to errant modifications by the end user that can cause the software to fail to operate.
- Traditional Windows-based client/server software requires an additional database layer of software to be installed on each desktop. Moreover, this type of software requires each end user to make a separate connection to the database, which has a detrimental affect on the scalability of the software.

Industry vendors such as [Microsoft](#) have announced various solutions such as network profiles and the Microsoft Zero Administration Kit to help resolve some of these



problems. Because of these problems, managers are now considering the total cost of ownership of all hardware and software systems.

The Solution to Time and Attendance Software Deployment

Windows-based time and attendance software faces all of the potential problems above when deployed. Because the software touches most if not all employees, the costs involved are typically quite large.

The solution to all of the above problems lies in using Web-based technologies and your intranet. With web-based solutions, each end user accesses the time and attendance software through a web browser. Because all desktops now come standard with either Microsoft Internet Explorer or Netscape Navigator as browsers, each desktop already has the tools needed to access a variety of applications.

Web-based applications are traditionally split into multiple components. The user interface or front end component executes within the browser, either as HTML, Java, Active-X, or JavaScript. The server side applications can be developed and executed in a variety of ways, but Java, C++, Visual Basic along with an application server, servlet, and/or active server pages are the most common back-end solutions.

This approach has many advantages. The client component is typically a thin component. The front end handles the data presentation and user interface. This thin-client model means that the desktop doesn't require any database software installed in order for proper execution. Typically the only requirement is a compatible browser (with a compatible Java Virtual Machine installed if the client is a Java client).

The server side also has many advantages over a traditional two-tiered client/server system. Typically the server side utilizes a multi-threaded design to maximize performance on a multi-processor server. The server side typically also uses an application server and database connection pooling to gain high availability and scalability required to support hundreds or thousands of users.

This multi-tiered web-based design is ideally suited for time and attendance software. Time and attendance software that is widely distributed throughout an organization needs to run on a variety of desktops. The time and attendance software needs to support a very large user population. This is especially true in environments where a lot of employees may access the time and attendance software in a short period of time (such as at the end of the week).



Summary

When choosing time and attendance software, carefully consider how the software is going to be deployed. Windows-based time and attendance software works fine in smaller installations (under 50 employees). A larger installation of time and attendance software is best handled by a web-based solution that runs on your intranet. Look for a time and attendance solution that has a thin client approach that fits with your desktop and browser standards. Also make sure that the time and attendance software uses a back-end design that will scale to your requirements.