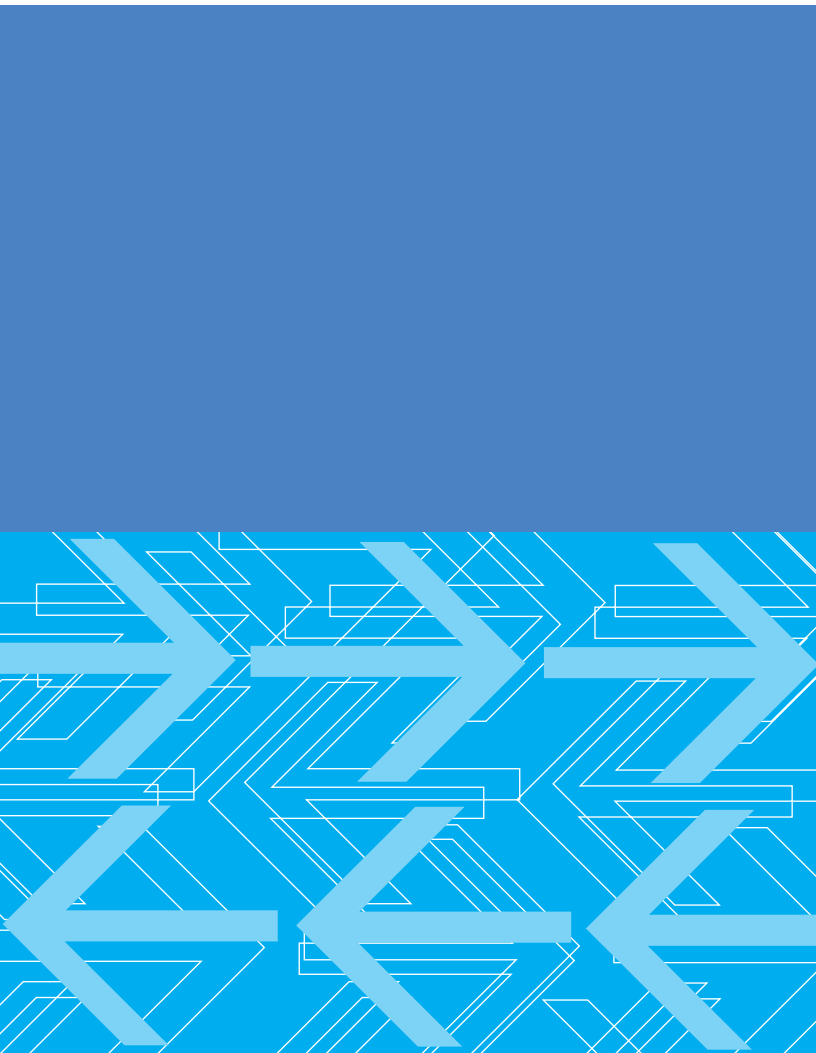*Compaq Batch Scheduler for Windows NT*

Mainframe-Caliber Automated Job Scheduling Software for Windows NT

This white paper addresses extending the capabilities of Windows NT® to include automated job scheduling — a function that is critical for enterprise computing.

COMPAQ
Better answers

Watch your Windows computing become more productive and efficient — with *Compaq Batch Scheduler* software

As companies deploy Windows® enterprise-wide, business-critical processing that once took place on mainframes is being done on Windows NT® servers. This processing includes uploading and downloading repetitive files, processing sequential or dependent strings of jobs, performing synchronized database updates, recalculating spreadsheets, managing workflow, distributing e-mail, and even rendering CAD/CAM graphics. Although these activities might seem routine, the information being processed is vital to the company's operations.

While predictable and repetitive, this processing is also extremely labor intensive and requires extensive hardware resources. And because most of today's corporate computing resources are so distributed, many of these activities require manual intervention at multiple sites. How does a company add this critical mainframe capability to its Windows NT environment? By deploying *Compaq Batch Scheduler for Windows NT* software.

Enterprise-class job scheduling for Windows environments

Compaq Batch Scheduler for Windows NT software delivers mainframe-caliber, unattended job scheduling and batch processing to the Windows client/server environment. Compaq applies its proven production system principles to the client/server enterprise to unlock the power of workstations, PCs, and servers. With *Compaq Batch Scheduler* software, you can use all of your Windows computing power — 24 hours a day, every day.
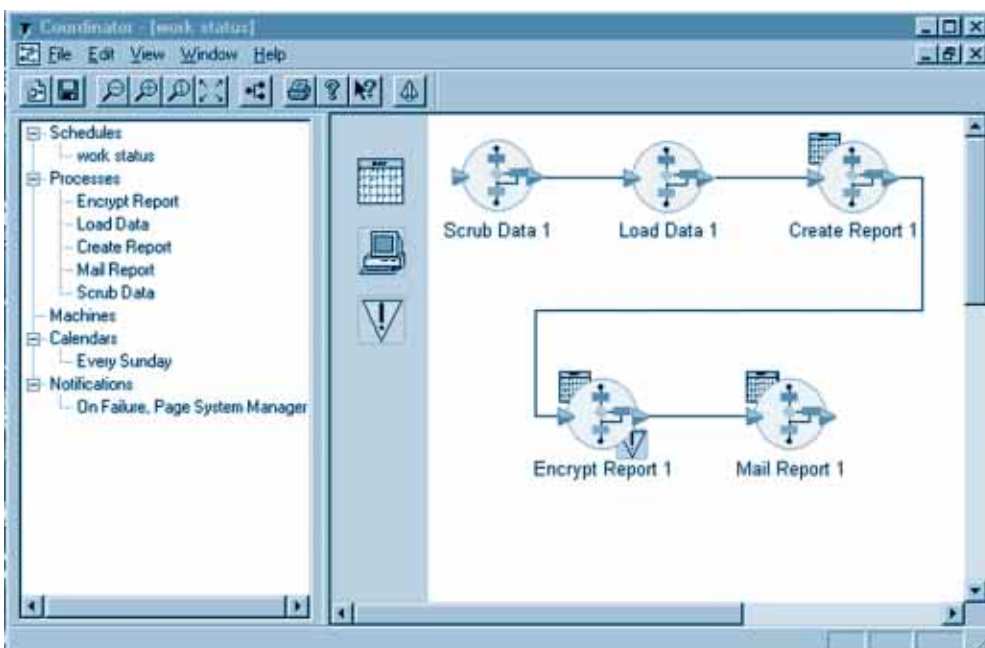
Compaq Batch Scheduler software provides centralized scheduling from Windows NT and Windows 98® workstations. It lets you execute batch jobs on systems running Windows NT, Windows 98, *Compaq Tru64 UNIX®*, Sun® Solaris®, IBM® AIX®, HP-UX®, and *Compaq OpenVMS™* platforms. Regardless of the platform, compute-intensive jobs run automatically, at any time.

This ability to start and manage jobs — unattended — lets you reduce costly overnight, weekend, and holiday staffing needs.

Other batch products are available, but most were ported from other platforms. *Compaq Batch Scheduler* software was designed specifically for Windows NT. It supports Microsoft Cluster Server, can run as an NT service, and utilizes NT security. Most important, it is BackOffice® logo certified.

Simple, flexible batch processing

Compaq Batch Scheduler software has an elegant graphical user interface for job scheduling and monitoring, plus a unique visual scripting tool for batch job creation. The Visual Coordinator uses familiar pull-down menus and drag-and-drop functions to easily create schedules and launch jobs. The Visual Scripting tool creates batch jobs using an object-oriented development

Coordinator, the visual tool that lets you schedule jobs graphically, offers drag-and-drop simplicity.

environment that is easier and more powerful than creating batch jobs using MS-DOS®. The Visual Monitor provides an enterprise-wide view for quick, clear inspections of all available machines and scheduled applications. When the job is completed, or if it is interrupted, the system automatically notifies you via e-mail, pager, Windows NT Event Log, or SNMP traps.

To prioritize and control batch job schedules, *Compaq Batch Scheduler* software uses native Windows NT priority and security features, which limit access so only approved personnel can access schedules and jobs. Return code capabilities provide sophisticated feedback for reliability, error checking, and performance monitoring. And you can easily schedule batch jobs throughout the year with user-definable business calendars and templates.
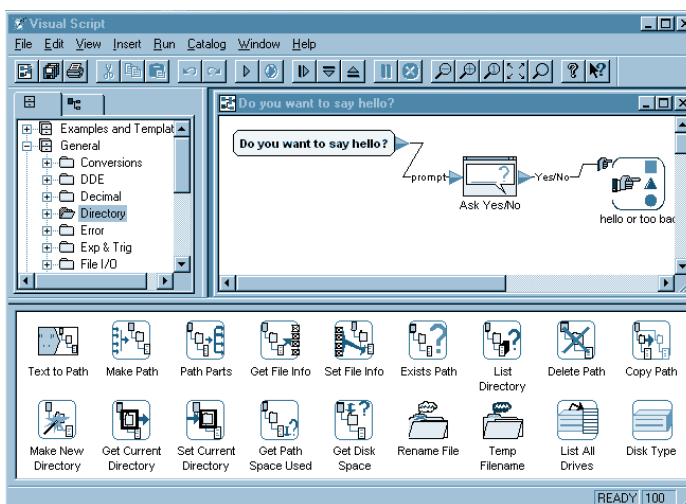
Visual Script eliminates code writing

The Visual Script lets you construct programs using pictures instead of text. Unlike many tools that have been called visual — but still require conventional programming — Visual Script is fully and truly visual. You don't need to write code to MS-DOS to create programs, which saves time and money. Once you create programs visually, you can run them as batch jobs using the Coordinator.

Visual Script has three windows:

→ *Overview window — displays all the file cabinets available*

→ *Catalog window — displays the contents of the file cabinet or folder open in the Overview window*

→ *Canvas window — displays the flowgram — or flow of data — from one function to another*

Visual Script is a fully visual tool that lets you easily create and reuse batch programs.

With Visual Script, you create applications simply by drawing pictures. First, locate each function you want to use in the Catalog window. Next, drag each function out of the Catalog window and drop it onto the Canvas window. Finally, link the functions.

These applications can do specific tasks, such as:

→ *Find all folders on a computer that have had recent high activity*

→ *Determine how full a disk drive is*

→ *Automatically delete files of a certain kind in certain folders*

→ *Run backups*

→ *Create disk snapshots (in conjunction with* **Compaq StorageWorks Virtual Replicator** *software)*

→ *And more*

The Visual Script Catalog includes more than 200 assembled functions that you can use immediately to build programs, including:

→ *Plus, minus, and other integer and decimal arithmetic functions*

→ *Search, extract, and other text processing functions*

→ *Open, close, read, write, and other file functions*

→ *Create path and other directory functions*

→ *Launch applications, send keys to an application, and other system functions*

→ *Send message and other Dynamic Data Exchange (DDE) functions*

All functions — whether they come with the software or are created later — are reusable.

Advanced job scheduling features

Compaq Batch Scheduler software lets you centralize the control of jobs and computing resources — administering the entire enterprise from a single point. Extensive scheduling parameters give you the flexibility to create task cycles that make business sense, such as:

→ *Run jobs every day*

→ *Run Monday – Wednesday – Friday only*

→ *Run the last day of month*

→ *Run on a specific date*

→ *Run any other required time*

It also allows dependencies between jobs, between schedules, and between jobs from different schedules. All schedules are set using the graphical calendar. With a few simple keystrokes, you can set schedules for the entire year.

Scheduling features:

Event Dependencies — *Define file and generic events to trigger other schedules or jobs.*

High Throughput/Task Volume — *Schedule and define thousands of jobs.*

Queuing — *Quickly queue jobs to run on assigned, first-available machine, or most-available machine.*

Repetitive Execution — *Schedule tasks to execute at specified time intervals, such as every hour.*

System Components

The basic components of *Compaq Batch Scheduler* software include:

The ***Automated Process Scheduler***, or APS, is the engine that launches all of the schedules. It has central control of the entire distributed batch system, but is invisible and runs in the background. Smaller implementations will need only one APS. For larger implementations, you may wish to have multiple APSs.

The ***Sentinel*** runs on every computer that executes schedules or jobs.

The ***Administrator*** provides tools for the system administrator to configure the APS, define users and set user privileges, create machine lists and classes, and define business calendars and calendar templates.

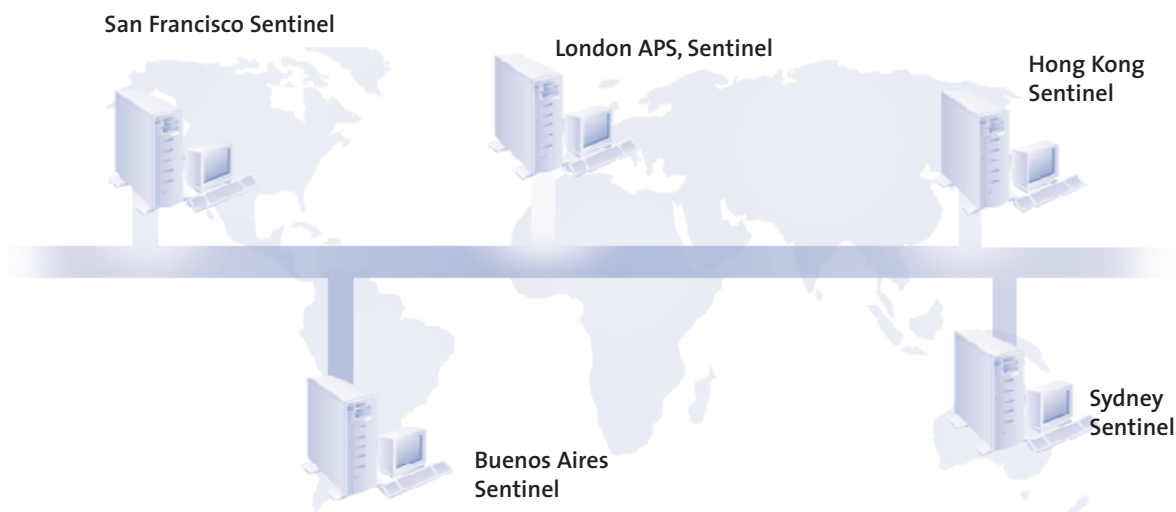The ***Monitor*** provides the window for monitoring jobs and schedules.

The ***Coordinator*** is the visual tool for creating job schedules.

The ***Visual Script*** is an object-oriented software development environment that allows for easy creation of batch programs.

Compaq Batch Scheduler software allows you to manage and control batch processing for the entire enterprise from a single point. For example, the scenario below shows how it can manage and control jobs over a large, global, distributed environment.

A multinational corporation polls its global sites nightly for data, which it uses to update the central database, generate daily activity reports, and finally create a back up of the database. In London, they are running the APS — the scheduling engine for the entire operation.

The APS in London is launching and managing processes in San Francisco, Buenos Aires, Hong Kong, and Sydney. In addition, the Administrator, Monitor, Coordinator, and Visual Script components can be used in conjunction with the APS or Sentinel from any location, or even remotely from a PC or laptop.

San Francisco Sentinel

London APS, Sentinel

Hong Kong Sentinel

Sydney Sentinel

Buenos Aires Sentinel

Outstanding integration

Because of its ability to run jobs on multiple platforms, *Compaq Batch Scheduler* software offers the highest level of Windows NT integration available. It provides:

Database Connectivity (ODBC) — *Supports industry standard for storing schedules and history in a variety of databases.*

LAN and WAN Capability — *Allows execution of any schedule component regardless of location through TCP/IP and IPX/SPX support.*

Operating System Support — *Lets you launch batch jobs and schedules from Windows NT or Windows 98. Jobs can run on Windows NT, Windows 98, IBM AIX, HP-UX, Sun Solaris,* Compaq Tru64 UNIX, *or* Compaq OpenVMS *platforms.*

Machine Class and Group Support — *Allows machine use based on System Management Server inventory or user-defined data and target processes for specific classes or groups.*

Multiple Target Machines Support — *Assigns the execution of a task, such as backup or virus check, to all or selected machines.*

System Management Server (SMS) Capability — *Provides machine configuration information.*

OCX Support — *Provides API for third-party integration.*

Command Line Interface Capability — *Lets you enter functions from the command line.*

NT 4.0 Support — *Is completely compatible with Windows NT version 4.0 (with Service Pack 4 or greater).*

NT Service — *The APS and Sentinel can run in background as NT services.*

Centralized control and security

Compaq Batch Scheduler software provides flexible control over all the resources in your Windows NT environment. You can spread job loads over multiple target machines to minimize the time needed to process a schedule. You can direct a job to run on the first available machine, or you can organize multiple machines into a single working environment for schedule processing. The choice is yours.

All Windows NT security features are implemented, including:

Enterprise View — *A graphical representation of all batch job schedules and control parameters.*

Schedule View — *A monitor of all jobs and their status.*

Load Balancing — *The spreading of job loads over multiple target machines to minimize schedule execution time.*

NT Security — *An implementation of Windows NT security features, which allows you to log on as an administrator, user, or as a domain user.*

Alternative Security Model — Compaq Batch Scheduler *software has a built-in security model, which you can use instead of NT security.*

Partitioning — *Grouping multiple machines into a single working environment.*

Managing schedules

Compaq Batch Scheduler software presents the status of all processes and schedules in real time, so you can see what's happening with all jobs. It also notifies you of problems via the NT Event Log, pager, or e-mail. History reports and audit logs provide complete information on virtually everything that has happened. And the "What runs when" report shows you each day's scheduled production runs.

The management features of *Compaq Batch Scheduler* software include:

Auditing — *All events are recorded along with a day/time stamp and the user who executed the event.*

Color-Coded Status — *Color codes indicate status changes and alerts.*

Error Reporting — *Error codes are reported for any scheduled task that fails to execute.*

History — *All tasks executed by the schedule are recorded in a detailed log.*

Notification — *Notification of process completion or error is delivered by e-mail (SMTP, Microsoft Mail, and Microsoft Exchange), pager, Windows NT Event Log, or SNMP traps.*

Return Codes — *Return codes are captured from both Windows and DOS processes.*

Seagate Crystal Reports — *Reports can be integrated with Seagate Crystal Reports, providing reports that show schedule and process activity and history.*

Summary

Compaq Batch Scheduler for Windows NT software is the industry's premier Windows-based enterprise batch job scheduler. It saves you time and money by automating all aspects of batch processing — from job and schedule creation, through execution, to notification of job completion. It reduces staff overtime expenses because jobs can be run unattended. The overall productivity of your computing resources is increased because you can easily assign batch processing jobs to idle machines. And it gives your company a centralized point for managing and controlling the processing of jobs anywhere within the enterprise.

Compaq Batch Scheduler software is part of a portfolio of software products, services, and support for enterprise-class Windows NT environments. The *Compaq Enterprise Software for Windows NT* program brings Compaq expertise in systems software, messaging and collaboration, and application development to Windows NT operations. These solutions enhance Microsoft's BackOffice environment (Microsoft Exchange, Microsoft Cluster Server, MTS, and SQL) and leverage your existing Microsoft investment.

For more information about *Compaq Batch Scheduler* software or the *Compaq Enterprise Software for Windows NT* program, visit our Web site at

www.compaq.com/products/ software/ntenterprise

or call us at 1-800-344-4825.

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