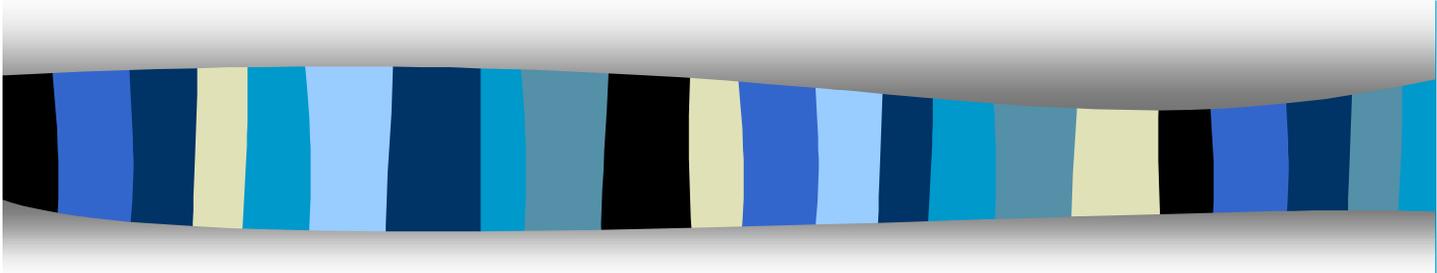


# Network Time Synchronization



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## Objective

- Synchronize date & time across multiple NOS and OS platforms
- Ensure minimal user disruption and utilize the fewest support services resources possible
- Ensure the network is Y2K compliant with regard to time synchronization



## Goal

- Implement a process by which all clients and servers on the DOE network automatically display a consistent date and time for 1999, and through the year 2000, with ZERO user disruption and minimal support services interaction.



## Outline

- Previous Discussion
  - Using Novell Set Station variable and 95/NT Nettime and Time Serv
  - TimeServ architecture, installation, configuration & use of NTP
- Current Discussion
  - Deploying Nettime and TimeServ



## Novell Network

- Win 95, NT and 3.x
- Clients must use Novell IntraNetware Client 32, v.4.15 for NT, v.3.0 for 95
- Use Set Station Time=On (Novell default client variable) to synchronize time with a Novell login server at every login



## NT Network - Win 95 Client

### ■ Login Script

- Ensures time synchrony at every login
- Must use a login script that runs Microsoft's NET TIME command:  
NETTIME\\<computername>  
/SET /Y  
where <computername> is the name of a server that has accurate time
- Ensure that server replication is functioning properly so that the login script on the PDC is identical to all BDC's (consistent accurate time)



## NT Network - Win 95 Client

### ■ Considerations

- Client may synchronize with a server or a domain
- Does not prevent users from changing time at will
- Only effective for systems that connect to the network regularly

## NT Network - NT Client

### ■ TimeServ

- Service included in NT 4.0 Server Resource Kit
- Runs in background regardless of login rights
- Server AND workstation must have service installed
- Consists of TIMESERV.EXE, TIMESERV.INI and TIMESERV.DLL

## NT Network - NT Client

### ■ TimeServ (cont'd.)

- Utilize Event Logging (NTP errors)
- Rem out all unused settings in timeserv.ini
- Sometimes accessing the NTP time source may time out due to delay between hops. (See listing of Public Time Sources)



### NT Network - NT Client Deployment

- Manual
  - Must log in locally as Administrator to install and configure
  - Issue: Poorly utilizes resources, interrupts user work pattern
  - Benefit: Minimizes possibility of security breach



### NT Network - NT Client Deployment

- SMS
  - Use Package Command Manager remotely
  - Issue: Must have SMS previously deployed
  - Benefit: Multi-user deployment, SMS GUI, uses RSERVICE



## NT Network - NT Client Deployment

- RSERVICE (standalone, no SMS)
  - Uses remote administrator access install & configure; uses command line switches
  - Configurable \*.ini file for varied deployment (See RSERVICE.EXE doc for examples)
  - Issue: Need to be able to use command line and have access to reference material
  - Benefit: Does not require prior SMS deployment, runs



## NT Network - NT Client Security

- RSERVICE uses a Domain Admin account through which the service is deployed. If user could hack the password, the user would then be able to administer the domain.

Similar situation exists with System Account; however, the password would only allow the administration of the local workstation and others that share the same password.



## NT Network - NT Client Security

- Microsoft has released newer version of RSERVICE that purports it has patched this security issue. We are currently testing it.



## NT Network - NT Client

- Considerations
  - Aside from the security risk, this is the most effective method to deploy any service.
  - Alternative 3rd Party deployment tools exist but have not been identified or evaluated.
  - Research in this area will benefit other deployments of like kind.



## Reference

- **Windows NT 4.0 Server Resource Kit**
  - Contains the exe, dll and ini files necessary to run TimeServ
  - Contains the exe. and ini files necessary to run RSERVICE
- **RSERVICE.EXE (Service Remote Control)**
  - by Microsoft Corporation, MS TechNet - Feb 1999
    - Systems Management Server 1.2 Resource Guide
- **TimeServ 1.55 - Time Service Documentation**
  - by Douglas Hogarth, creator of TimeServ
    - Accessible on the World Wide Web



## Reference (cont'd.)

- **Public NTP Time Sources**
  - <http://www.eecis.udel.edu/~mills/ntp/clock1.htm>
- **Windows NT Magazine Online**
  - *TimeSynchronization in an NT Network*, Feb 1997, Tao Zhou
    - <http://www.winntmag.com/magazine/article.cfm?ArticleID=522>