This is the nineteenth in a series of short articles reviewing the theory and practice of making backups.

* * *

All data center managers should be able to answer questions about the costs of the backups being made on their systems. In calculating costs, the following factors should be included in a simple spreadsheet (the example uses tapes as the example of backup medium):

- **Tape costs**
  - Tapes/backup
  - Purchase cost/tape
  - Storage cost/tape (including cost of tape rack and cost of owning or renting floor space)
  - Tape cost/backup (total cost * number of tapes)
  - Backup cycles saved (current week, end of week, end-of-week set, month-end set, year-end set)
  - Cost of all tapes (sets * total cost)

- **Time costs**
  - Hour/tape for backup
  - Hour/backup total
  - Cost/hour for operator (salary + benefits)/hour
  - System cost/month (purchase, finance, maintenance, floor space, electricity, air conditioning, insurance, system management services, software licenses and maintenance)
  - Days used per month
  - Hour/day availability
  - Cost/hour system
  - Time cost/hour backup
• Total cost/backup (tapes + time)
• Annualized costs
  o Backups/year
  o Total backup hours/year
  o Time cost/year
• Total investment/year (tape costs + time costs)

This detailed information will be invaluable in answering management questions about backup policies and their rationale.

In the next article in this series, we'll look at optimizing the frequency of backups.

* * *

M. E. Kabay, PhD, CISSP is Associate Professor in the Department of Computer Information Systems at Norwich University in Northfield, VT. Mich can be reached by e-mail at <mkabay@compuserve.com>. He invites inquiries about his information security and operations management courses and consulting services.

Copyright © 2001 M. E. Kabay. All rights reserved.

Permission is hereby granted to Network World to distribute this article at will, to post it without limit on any Web site, and to republish it in any way they see fit.