PROGRAMMING STAFF NOTE 65

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SUBJ: Proposed Extensions to CTSS LOGIN Command Logic

Programming staff note 50,by J. Spall, presented a proposal for a
new LOGIN command based on a logic of an accounting file per user.
This note suggests three extensions of the ideas presented in that
note. A characteristic of all three of these suggestions is that
with a very modest addition of logic, powerful administrative tools
are made available.

1. The Variable Programmer.

A basic feature of the accounting file of PSN 50 is that it may contain
not just one, but several passwords. By providing one of the several
passwords, the user may select which of several sets of privileges,
party groups, or console authorities he will use. The multiple password
allows an arrangement in which a Kludge display user can obtain priority
party line privileges, but only if he is at the display console, by
giving an alternate password.

In this suggested extension, the password would be used to select not
only privileges, party group, and console authority, but also the pro-
grammer (author) number to be used during this login session.

This feature could be used as in the following example: A single file
directory, and accounting file, named M1416 STAFF is set up. The
accounting file contains not just one password, but a list of, say,
a dozen passwords, belonging to various staff members who occasionally
use the number for CTSS maintenance work. Associated with each pass-
word is the programmer number of the staff member involved. There are
two advantages to be obtained by using this feature:

      a.   When a staff member is called on to do emergency maintenance
            work, he logs in by giving his own secret password instead
            of having to obtain from some central supervisor a special
            "Staff" password, used by all persons doing maintenance.
            (The"Staff" password would present many security problems,
            because it would have to be known by several people, changed
            often, and would probably allow access to special privileges.)

      b.   When the staff member creates or modifies files, he leaves
            his own author number behind him rather than an anonymous
            "Staff" number. Similarly, while he is logged in, his
            identity is unambiguous, since the login information stored
            in Core A would include not only "M1416 STAFF" but the
            programmer number of the staff member.

The "variable programmer" feature allows the elimination of the need
for special passwords and "temporary numbers" for student problems or
common maintenance functions in many cases. It should also sharply
reduce the number of instances in which one user need give another
his password.

2. The Referred Login

This proposal by itself is not particularly useful, but if implemented
in combination with the previous proposal, it produces another powerful
tool. Associated with each password entry in the accounting file may
be the name of an alternate file directory (and, therefore, an alternate
accounting file). If an attempt is made to login to some directory,
but someone is already logged in under this directory, then LOGIN would
go to the alternate file directory specified in the accounting file (if
any) and try again.

In combination with the variable programmer proposal above, the Referred
Login would allow a "rotary line-finder" similar to the telephone
exchange device of the same name. For example, for staff usage, three
file directories (and accounting files) can be set up named

                    M1416 STAFF
                    M1416 STAFF1
                    M1416 STAFF2

If the staff member trying to do emergency maintenance tries to login
under M1416 STAFF, but someone else is already logged in under that
account, A Referred Login would automatically attempt to login the
staff member in the second directory. If the second directory is
also in use, an additional referral in its accounting file could cause
him to be logged under the third directory. Instead of having to type
three LOGIN commands, and his password three times, however, he would
merely receive three comments of the form:

                    M1416 STAFF already logged in
                    M1416 STAFF1 already logged in
                    M1416 STAFF2 logged in 1042.1, 1/21 from 20000.

Since each directory in the referral chain has its own accounting file,
it is not necessary that all accounting files be identical. For example,
it might be convenient to only have passwords for one or two staff mem-
bers rather than the whole set in the third directory in the above
example. This would mean that only two people could normally login to
do maintenance work, on STAFF and STAFF1, but that a supervisor
could always be assured of being able to login, on STAFF2 if necessary.

3. Direct Login Not Allowed Switch

This proposal adds a switch to the information associated with each password in an accounting file. If this switch is on, it means that the user can login to his directory only if he has been referred from another directory. Although this proposal appears at first to be rather simple-minded, and obscure, it again opens the door to a powerful administrative tool. The major use of this switch is to prevent login of a user unless some other user is <u>already logged in</u>. For example, one might set up a group of file directories,

        6.251 CLASS
        6.251 STDNT1
        6.251 STDNT2
        6.251 STDNT3
        etc.

In the accounting file for "6.251 CLASS" is a password for the instructor, allowing him to login under this number, and a password for each of the students. For each student password the Direct Login Not Allowed switch is <u>on</u>, and a referred directory is specified. The referred directory may be different for each student password. In each referred directory is an accounting file giving the student's password, and again the switch forbidding Direct Login is <u>on</u>.

Thus, the student cannot login to the instructor's directory, nor to his own directory, unless the instructor is already logged in. In all cases, however, a student logs in by typing

        LOGIN 6.251 CLASS

and giving his own private password.

This provides the instructor with a simple method of insuring that students only work at times when he is logged in and observing their operation.