

New # ?

Identification

Project Files

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Purpose

A project is an administrative grouping of persons, directed by an administrator. For each project at an installation, there is a project file, containing information about the project which is of interest to system administrative procedures. All project files are in the project directory.

Discussion

The project directory is immediately inferior to the root directory, and has the path name

```
> project_dir
```

Each entry in the project directory is a project file containing information about the project which is used by system administrative procedures. The project file is not an information file for use by any administrator.

A project file has as its name the project id of the project. For example, a project file might have the pathname

```
> project_dir > T234
```

Access Control

This discussion assumes that the reader is familiar with access control as it is described in BX.8.00. Very briefly, access control is based on personal name, project id, instance id (see BQ.0.00), and protection ring.

Further, usage attributes give specific permission to read (R), execute (E), write (W), or append (A).

The project directory is accessible from the administrative ring by

REWA	system administrator.system.*	, ring 1
E	unknown.unknown.*	, ring 1

This allows the system administrator to control which projects are known to the installation. For example, no one but the system administrator can add a new project to the installation. It seems advisable to restrict his access so that he is unlikely to alter the directory unintentionally. To this end, he ~~may~~^{is} be allowed to read, etc., only when he is acting as system administrator, i.e., on the "system" project.

In addition, the user_who procedure (see BQ.3.02) must be able to find a specific project file. User_who executes in a user process-group (see BQ.300) as part of login in, before the user to whom the process-group belongs has been identified. For access control purposes, the process-group is considered to belong to a person named "unknown" working on project "unknown". (Of course, system procedures are completely in control while "unknown" is logging in, so that an unidentified person is never able to snoop around in project files. Only the user_who procedure in the administrative ring references the project file.)

Execute access to the project directory is also given to all project administrators executing in the administrative ring. For example, if John Smith is the project administrator for project "T234", the project directory access control list includes

E John_Smith.T234.* , ring 1

Each project file is accessible from the administrative ring by

RWA administrator.projid.*

R unknown.unknown.*

Here "administrator" stands for the name of the project administrator, and "projid" stands for the id of the project.

Implementation

Each Multics installation may have its own requirements for the contents of project files. For maximum flexibility, each item in the project file has ^a name which appears in the linkage section of the file. For example, to modify the list of names of persons who work on project T234, the administrator would reference

```
> project_dir > T234$user_names
```

In the initial implementation of Multics, the project file contains only the list of user names. User_names is a PL/I structure:

```
dcl 1 user_names,
    2 nusers fixed, /* number of users on project */
    2 list (nusers) char (24);
    /* array of names */
```

default account name?