

TO: MSPM Distribution  
FROM: Harry J. Hebert  
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This reissue of BD.6.02 represents the many changes in directories and data bases to the Multics system since 08/18/66. New directories have been added, old ones dropped and the descriptions of the contents of the remaining directories are much more explicit than before. The access control attached to each item is now in terms of a more or less fixed set of process-groups.

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### Identification

System Skeleton  
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### Purpose

This section outlines the arrangement of system information within the hierarchical storage structure provided by the Basic File System. Detailed contents of, and policies concerning, particular files and directories are given in various other MSPM sections as indicated by reference in the outline below.

### Discussion

The outline below lists each directory and file with its contents and its access control information. This access control information is of the form:

person.project.instance - mode - ring

Mode can be one or more of the following:

- W - meaning the user involved has permission to write into the segment,
- R - meaning the user involved has permission to read the segment,
- A - meaning the user involved has permission to append information to the end of the segment, and
- E - meaning the segment contains a procedure which the user involved has permission to execute; or if it is a directory segment, the user involved has permission to search the segment.

Access is actually permitted to process-groups, rather than users. A process-group has a name of the form: person.project.instance. "Person" represents the name of the user, "project" represents the project he is working on, and "instance" is a unique tag which permits the user to login more than once under the same name and project.

Any of these items can be represented by an "\*". This means that any word is acceptable in that position. For example, \*.\*.\*, denotes all users of the system. The "person" and "project" usually denote a user, but if the person element is null, the process-group is a system process-group. System process-groups have special functions to do for the Multics System and, therefore, have reserved names. These reserved names are:

1. .sys\_control.aa - This process-group contains the Answering Service Process, the User Control Process and the System Control Process. These processes keep track of the users of the system.
2. .backup.aa - These processes make copies of all segments that are ever created. These backup copies would be used to reconstruct the system as it appeared at a given time before a given catastrophe had occurred.
3. X.Y.Z - This name is used in many ways in this write-up. It stands for a particular individual process-group. For example, in the process directory directory it stands for the process-group to which the process in question belongs. In the case of a mail box it would refer to the owner of the mail box. Z must be read as "\*" at all times. (This is not a reserved process-group name).
4. \*.system.\* - This project is reserved for the user previously called the system administrator, i.e., any person authorized to inspect and adjust accounting billing and personnel information.
5. \*.library.\* - These process-groups are for the user or users who maintain the system documentation.
6. \*.sys\_operator.\* - These process-groups are used by users known as the system operators, i.e., any person authorized to give commands controlling the running of the system.
7. \*.operator.\* - These process-groups are used by users who are operators but do not yet qualify to be system operators.
8. \*.user\_profiles.\* - These process-groups are reserved for system programmers who have permission to alter the user profile directory which contains information about a person as a user.

9. \*.ring 0 programmers.\* - These process-groups are for any programmer who has been certified to write ring 0 routines.
10. \*.ring 1 programmer.\* - These process-groups are for any system programmer who has been certified to write ring 1 routines.
11. \*.ring 32 programmer.\* - These process-groups are for any system programmer who has been certified to write ring 32 routines.
12. .UDMPG.aa - This process-group name in this writeup will stand for all the device manager process-groups which manage all the devices available at the particular installation.

The rings may be described loosely as follows:

1. Ring 0 - hardcore ring - here reside Traffic Control, Process Control, Basic File System, File Access Control and all directories.
2. Ring 1 - administrative ring - here reside Linker/Search, Segment Management, Accounting/Billing, personnel and device assignment.
3. Ring 32 - user base ring - unprotected user area.

Each of the major entries of this outline represents a directory which appears in one of two sub-root directories. These two sub-root directories can be found in the root directory and are called the `multics_root` directory and the `system_root` directory. The `system_root` directory contains those segments and files used by Multics System Initialization, Backup and Hardcore Supervisor. The `multics_root` branch of the hierarchy does not exist to these functions of the Multics System; the `system_root` directory appears as their root directory. The `multics_root` directory contains all other segments and files. The Multics user will operate in this branch of the hierarchy and to him `multics_root` directory is his root directory and he knows nothing of the `system_root` hierarchy branch.

A chart of the system skeleton appears at the end of this section. These pages should be viewed as one chart with page 24 on the left and page 32 on the right.

Outline of Contents of Root Directory

I. Multics\_root Directory

Access: (1) \*.ring 0 programmer.\* - WARE - Ring 0  
(2) \*.\*.\* - E - Ring 0.

A. Login Directory - BQ.4.00

1. Dedicated Console list - BQ.4.01

Contains a list of all consoles and the users to whom they are dedicated.

Access: (1) .sys\_control.aa - R - Ring 1.  
(2) \*.system.\* - WAR - Ring 1.

2. Personnel list directory - BQ.4.02

Contains the names of all persons who may log in.

Access: (1) \*.system.\* - WARE - Ring 1.  
(2) .sys-control.aa - E - Ring 1.

a. Personal Identification File - BQ.4.02

Contains a user's password, default project id and lists of proxies.

Access: (1) Person identified in file \*.\*.\* -  
WAR - Ring 0.  
(2) .sys-control.aa - R - Ring 1.

B. Project Directory Directory - BQ.4.00

A directory of all project directories

Access: (1) \*.system.\* - WARE - Ring 1.  
(2) .sys-control.aa - E - Ring 1.

1. Project Directory - BQ.4.00

Contains list of users on each project

Access: (1) Project Administrator . project identified  
in directory .\* - WARE - Ring 1.

(2) .sys-control.aa - E - Ring 1.

a. User Profile Directory - BQ.4.03

A per-user directory whose entries contain information about a user as a user not as a person.

Access: (1) \*.user\_profiles.\* - WAR - Ring 1.

(2) X.Y.Z - E - Ring 32.

1. Segments giving various information about the user. For more information see MSPM Section BQ.4.03.

C. Account Directory - B0.0.00

Access: \*.system.\* - WAR - Ring 1.

1. Account Data Segment - BD.2.02

Normally one for each combination of person and project. Contains history and control information regarding system use and pointers to pool files.

Access: (1) X.Y.Z - WAR - Ring 0.

(2) Project Administrator .Y.\* - Ring 1.

2. Account Pool Files - B0.3.06

These files together with the account data segments form a tree structure of files which give the breakdown of the total computer usage for an installation, from the many individual users at the lowest level to a single file at the highest level. The depth of these files would vary for different installations.

Access: The project administrator at level i would have R access at level i-1 and WAR access at level i in ring 1.

3. Resource Name Table - B0.1.05

List of names of all the resources available under the system, i.e., tapes, disks, CPU's, etc.

- Access: (1) \*.sys\_operator.\* - WAR - Ring 1.  
(2) \*.\*.\* - R - Ring 0.  
(3) \*.system.\* - WAR - Ring 1.

4. Resource Price Table - B0.1.05

List of prices to be charged for each individual resource of the system.

- Access: (1) \*.system.\* - WAR - Ring 1.  
(2) \*.\*.\* - R - Ring 0.  
(3) \*.system.\* - WAR - Ring 1.

D. Billing Directory - B0.4.00

Contains a list of all billing accounts.

Access: \*.system.\* - WARE - Ring 1.

1. One file for each distinct billing account of the system. Contains name and credit rating and the address to send bill. Also, contains a list of users allowed to bill this account.

- Access: (1) .sys\_control.aa - WAR - Ring 0.  
(2) \*.system.\* - R - Ring 1.

E. Process-Directory-Directory

Contains a list of all process-directories.

Access: \*.\*.\* - WARE - Ring 0.

1. Process-Directory - BD.6.09

Contains a list of per-process segments in process.

- Access: (1) X.Y.Z - WARE - Ring 0.  
(2) X.Y.Z - E - all rings.

a. Known Segment Table - BG.1

A list of segments known by the process.

Access: (1) \*.\*.\* - WAR - Ring 32.

(2) X.Y.Z - WAR - Ring 0.

b. Process Data Segment - BJ.1.03

Contains wired-down information for a process in particular the process concealed stack and the process data block.

Access: X.Y.Z - WAR - Ring 0.

c. Process Definition Segment - BJ.1.06

Contains non wired-down information for a process in particular the fault stack and the process definition block.

Access: X.Y.Z - WAR - Ring 0.

d. Event Channel Table - BQ.6.03

Contains the process' event channels.

Access: (1) X.Y.Z - WAR - Ring 1.

(2) \*.\*.\* - WAR - Ring 0.

e. Entry point vector - BF.2.10

A one dimensional array of pointers (links) for a given outer module of a given process to the entry points of another given outer module. Used to forward outer calls to outer modules. Outer calls are a unique mechanism used only by I/O.

Access: X.Y.Z - WAR - Ring 0.

f. Ring n stack

An area for a process' temporary data while operating in Ring n. These stacks exist for all rings in which the process executes.

Access: X.Y.Z - WAR - Ring n.



g. Process Initialization Table

A table used during initialization of a process.

Access: (1) X.Y.Z - WR - ring process is in.

h. Linkage Segments

Copies of linkage section segments for all procedures used by the process.

Access: X.Y.\* - WAR - Ring 32.

i. Segment Name Table BD.3.01

A list of names by which segments are known to the process.

Access: X.Y.\* - WAR - Ring 32.

F. User Directory-Directory

A list of user directories

Access: \*.system.\* - WARE - Ring 1.

1. One directory for each user X.Y.\*. Note that several users may share a single directory, and that a user may build sub-directories inferior to his own directories.

Access: X.Y.Z - WARE - Ring 32.

G. System Log Directory

Keeps a log of different events that are of interest about the system.

Access: (1) .sys\_control.aa - E - Ring 1.

(2) \*.system.\* - WARE - Ring 1.

## 1. System Operation Log - BM.4.02

Contains lists of events of interest concerning the operation of the system. Includes time system came up, went down, reconfigured, crashed, etc.

Access: (1) .sys\_control.aa - WAR - Ring 1.  
(2) \*.sys-operator.\* - R - Ring 1.  
(3) \*.system.\* - R - Ring 1.

## 2. User Log - BM.4.03

Contains list of logins and logouts and device assignments to and from users.

Access: (1) \*.system.\* - R - Ring 1.  
(2) \*.sys\_control.aa - WAR - Ring 0.

## 3. Trouble log - BM.4.04

Contains list of reported hardware and software problems.

Access: (1) \*.system.\* - R - Ring 1.  
(2) .sys\_control.aa - WAR - Ring 0.  
(3) \*.sys\_operator.\* - R - Ring 1.

## 4. Secondary Storage Backup Log - BM.4.05

Contains information concerning secondary storage.

Access: (1) .backup.aa - WARE - Ring 0.

## H. Multics Command and Subroutine Directory - BD.6.05

Access: (1) \*.\* - E - Ring 32.  
(2) \*.Ring n programmer.\* - WARE -  
Ring n,  $n \geq 1$ .

1. Multics commands and supervisor and library procedures which execute within the user base ring are listed here. Procedures appearing in this directory are maintained as a part of the standard Multics system, and will exist at every Multics installation. Linkage faults within the user base ring and ring 1 cause a search directed by the user's search list, which will generally include this directory.

Access: (1) \*.\*.\* - E - Ring n.

(2) \*.Ring n programmer.\* - WARE -  
Ring n,  $n \geq 1$ .

I. Local Command and Subroutine Directory - BD.6.06

Access: (1) \*.\*.\* - E - Ring n.

(2) \*.Ring n programmer.\* - WARE - Ring n,  
 $n \geq 1$ .

1. Commands and library procedures which are maintained by the local installation. As far as users of a particular installation are concerned these procedures are "part of the system" in the sense that they are fully documented, checked out, and maintained by the local system staff; maintenance and storage space for these routines is charged just as are Multics standard commands.

Access: (1) \*.\*.\* - R - Ring n.

(2) \*.Ring 32 programmer.\* - WARE -  
Ring 32.

J. Community Directory - BD.6.07

Access: (1) \*.\*.\* - E - Ring 32.

(2) \*.Ring 32 programmer.\* - WARE - Ring 32.

1. Commands and other procedures contributed by the local community of users of an installation. This directory merely contains links to files appearing in private user directories. Entries may be made in the community library in accordance with a local installation policy concerning usefulness and reliability of the procedures.

Access: (1) \*.\*.\* - E - Ring 32.

(2) \*.Ring 32 programmer.\* - WARE - Ring 32.

K. Documentation Directory

Access: (1) \*.\*.\* - E - Ring 32.

(2) \*.library.\* - WARE - Ring 32.

1. Table of Contents. A structured description of the contents of the documentation directory along with one abstract of each document.

Access: \*.library.\* - WAR - Ring 32.

2. Documents describing the system and installation.

Access: (1) \*.library.\* - WAR - Ring 32.

(2) \*.\*.\* - R - Ring 32.

L. Process-group Directory Directory - BD.6.10

A list of process-group directories.

Access: .sys\_control.aa - WARE - Ring 1.

1. Process-group directories

One directory for each process group.

Access: X.Y.Z - WARE - all rings.

- a. Attach table - BF.2.13

A per-process-group table containing one entry for each ioname known to I/O at a given moment in a given ring.

Access: X.Y.Z - WAR - Ring 1.

- b. Type table - BF.2.14

Contains information on the different types of io devices. Used to create attach table entries.

Access: X.Y.Z - WAR - Ring 1.

c. Per-ioname Segment - BF.2.20

Contains information concerning an ioname defined by an attachment in a process of a process-group and consisting of the following data bases:

1. Header.
2. Standard Per-ioname Base (PIB).
3. Standard PIB auxiliary based storage.
4. PIB extensions (PIBE).
5. Transaction Block Extensions (TBE).
6. Interprocess Communication Block (ICB).

Access: X.Y.Z - WAR - Ring 1.

d. Transaction Block Segment - BF.2.20

Contains a history of individual transactions.

Access: X.Y.Z - WAR - Ring 1.

M. Post Office Directory - B0.8.0

Access: \*.system.\* - WARE - Ring 1.

1. Telephone list. This is a file containing non-privileged information about users of the system. It contains name, address, telephone number, projects and tree name of mail box of any person using the system who is willing to be listed in a publicly available directory. B0.8.02

Access: (1) \*.\* - R - Ring 32.

(2) \*.system.\* - WAR - Ring 1.

2. Mail boxes - B0.8.01

One file per person willing to receive messages from other users. The owner of a mail box may have his mail "delivered" to a directory of his own choosing by requesting that his mail box file be replaced with a link to his own directory.

Access: (1) X.Y.Z - WAR - Ring 32.

(2) \*.\* - A - Ring 32.

N. Global I/O Directory

Contains data and procedure segments used by the I/O system and which cannot be logically placed in any of the other I/O directories.

Access: (1) \*.\*.\* - RE - Ring 0.

(2) \*.system.\* - WARE - Ring 1.

1. I/O Data Segment Directory

Contains data segments used by the I/O system.

Access: (1) \*.\*.\* - RE - Ring 0.

(2) \*.Ring 0 programmer.\* - WAR - Ring 0.

2. I/O Procedures Directory

Contains the I/O procedures.

Access: (1) \*.\*.\* - E - Ring 0.

(2) \*.Ring 0 programmer.\* - WARE - Ring 0.

O. System Process Reserved Storage Directory

A list of all system process storage directories.

Access: (1) System process-groups - RE - Ring 1.

(2) \*.Ring 1 programmer.\* - WARE - Ring 1.

1. Answering Service Directory

a. Answering Service Line Table - BQ.2.01

Contains information on all the communication lines over which users may dial up to log in.

Access: .sys\_control.aa - WAR - Ring 1.

b. Cltext - BQ.2.01

An ascii file giving the possible communication lines available to the system.

Access: .sys\_control.aa - R - Ring 1.

2. Test and Diagnostic Utility Directory

Access: \*.Ring 0 programmer.\* - WARE - Ring 0.

a. Utility files - BR.0.01

Files which contain data and procedures required for controlling or maintaining the Test and Diagnostic system.

Access: \*.Ring 0 programmers.\* - WAR - Ring 0.

3. Alarm Clock Manager Directory

Access: \*.Ring 0 programmer.\* - WARE - Ring 0.

a. Wake-Time Table - BD.10.03

A list of all wakeups which have been requested by all processes of the system.

Access: \*.\* - WR - Ring 0.

b. Time Zone Table - BD.10.02

A table of time zone abbreviations.

Access: (1) \*.system.\* - WR - Ring 1

(2) \*.\* - R - Ring 32.

4. Absentee Monitor Directory - BQ.2.04

Access: \*.Ring 1 programmer.\* - WARE - Ring 1.

a. Absentee User's Table

A list of absentee users wishing service.

Access: (1) \*.\* - W - Ring 0.

(2) .sys\_control.aa - WAR - Ring 1.

5. Load Control Directory - BQ.5.0

Access: .sys\_control.aa - WARE - Ring 1.

a. Load Control Table

A list of all logged in users. Also contains the maximum number of interactive users allowed on the system.

Access: .sys\_control.aa - WAR - Ring 1.

6. System Control Directory - BQ.1.01

Access: .sys\_control.aa - E - Ring 1.

a. Request\_text - BQ.1.01

An ascii file containing all the possible operator requests.

Access: .sys\_control.aa - R - Ring 1.

b. Op\_functions\_text - BQ.1.01

An ascii file containing all the possible operator functions.

Access: .sys\_control.aa - R - Ring 1.

7. PIT Directory - BQ.1.01

Contains a pit template of all the possible system processes which system control can be called to create.

Access: .sys\_control.aa - E - Ring 1.

a. PIT's

Access: .sys\_control.aa - R - Ring 1.

8. Request Directory - BQ.1.01

Contains all the segments needed by the modules which handle the operator requests.

Access: (1) .sys\_control.aa - WARE - Ring 1.

(2) The system operator - WARE - Ring 32.



a. Request\_name - BQ.1.01

A segment used by the system operator to inform system control of a request he wants done.

Access: same as request directory.

b. Segments needed by the modules which handle operator requests.

Access: (1) The system operator - WAR - Ring 32.

(2) Process-group of module which handles the particular request - WAR - Ring of process-group.

P. Registry File Directory - BG.2.22

A list of the directories for each type of device available to the system.

Access: (1) \*.Ring 0 programmer.\* - WARE - Ring 0.

(2) .UDMPG.aa - WARE - Ring 1.

1. Type Directory

One directory for each type of device containing a list of all the devices of that type.

Access: .UDMPG.aa - WARE - Ring 1.

a. Registry Files

One file for each device giving I/O information for that device.

Access: (1) \*.\* - R - Ring 0.

(2) .UDMPG.aa - WR - Ring 1.

b. I/O Assignment Table

Contains a list of devices and to whom and where they are assigned.

Access: (1) \*.\* - W - Ring 0.

(2) .UDMPG.aa - WR - Ring 1.

Q. Certified Procedures Directory Directory

Access: (1) \*.Ring 0 programmer.\* - WARE - Ring 0.

(2) \*.\*.\* - E - Ring 0.

Contains a list of all ring n procedures which, for reasons of efficiency, execute in ring n although they are certified to be "ring n-1 reliable."

1. Certified Ring 1 Procedures Directory

Contains all the procedures which execute in Ring 1 but have been certified to be as reliable as Ring 0 procedures.

Access: (1) \*.\*.\* - E - Ring 1.

(2) \*.Ring 0 programmer.\* - WARE - Ring 1.

2. Certified Ring 32 Procedures Directory

Contains all the procedures which execute in Ring 32 but have been certified to be as reliable as Ring 1 procedures.

Access: (1) \*.\*.\* - E - Ring 32.

(2) \*.Ring 1 programmer.\* - WARE - Ring 32.

R. Saved Process Directory

The contents of a saved process directory are not completely specified, but should roughly approximate the contents of a regular process directory.

II. System\_root Directory

Access: (1) \*.Ring 0 programmer.\* - WARE - Ring 0.

A. System Initialization Directory

This directory contains segments which are used only during system initialization at which time access control does not exist. Because of the fact that when access control does exist these segments are not referenced, no access is attached to the directory or the segments.

1. Segment Loading Table - BL.2.01  
Contains an entry for each initialization and hardware supervisor segment which is known during system initialization.
2. Physical Record Buffer - BL.4.00  
Buffer area to read in Multics Segment Tape.
3. File System Device Configuration Table - BL.10.04  
Contains information pertaining to each secondary storage device accessible to the file system.
4. Multics Initializer's Descriptor Segment - BL.4.01  
Descriptor segment used during initialization. Contains the template descriptor segment.
5. Software Parameter Table - BL.3.04  
Contains parameters which set the software configuration of Multics.
6. Initialization Constants Table - BL.3.03  
Contains information generated at the beginning of system initialization and which is needed later on during initialization.
7. Major Module Configuration Table - BL.3.01  
Contains information concerning memory controllers and active devices.

B. Backup Directory

1. Reload List - BH.4.02  
A list of tape reels to be used at reload time.  
Access: (1) \*.sys\_operator.\* - WAR - Ring 0.  
(2) .backup.aa - WAR - Ring 0.
2. Statistics File - BH.1.02  
A file giving statistics on various secondary storage devices. Used to accumulate a graph of storage usage plotted against importance value for segments.  
Access: .backup.aa - WAR - Ring 0.

C. Hardcore Supervisor Non-wired-down Directory

1. Core Pool of Free Storage Sectors - BG. 1.00

A pool of free storage addresses on storage devices.

Access: \*.\*.\* - WR - Ring 0.

2. Device Disposition Table - BH.1.01

Contains information on capacity of a device, i.e., number of sectors in use, and numbers of sectors available.

Access: \*.\*.\* - WAR - Ring 0.

3. Process Waiting Table - BG.15.01

Contains a list of all processes currently waiting in the process wait and notify module and events they are waiting on.

Access: \*.\*.\* - WAR - Ring 0.

4. Device Assignment Table - BF.2.26

A record of all current device assignments to user process groups and information on these assignments.

Access: \*.\*.\* - WR - Ring 0.

D. Hardcore Supervisor Wired-Down Directory

1. System Segment Tables - BG.2

a. Active Segment Table

Contains an entry for each non-descriptor segment which is currently active.

Access: \*.\*.\* - WAR - Ring 0.

b. Descriptor Segment Table

Contains an entry for each descriptor segment which is currently loaded.

Access: \*.\*.\* - WAR - Ring 0.

c. Process Segment Table

Contains an entry for each process which is currently active. That entry contains the unique identifiers of segments which require special consideration while the segment is active.

Access: \*.\*.\* - WAR - Ring 0.

2. Core Map - BG.5

Contains information about the current use of each block of core. Consists of:

- a. Core Map having one entry for each block (64 contiguous words), and
- b. Group Map having one entry for each group (collection of contiguous blocks treated as one entity).

Access: \*.\*.\* - WAR - Ring 0.

3. Active Process Table - BJ.1.01

Contains one entry for every process in the system which is active. The Ready List (BJ.1.02), a list of processes which are ready to run, is implemented as a threaded list in the APT.

Access: \*.\*.\* - WAR - Ring 0.

4. Processor Data Segment - BK.1.01

A per-processor segment containing information on the processor and the process it is executing. The processor stack is in this segment.

Access: \*.\*.\* - WAR - Ring 0.

5. System Communication Segment - BK.2.02

Contains:

- a. Mask Table having information needed for interrupts.

- b. Interrupt Decode Table containing information needed to identify interrupts.
- c. Calendar Clock Interrupt Handler Data Block (BK.2.05) which is the source of information during a calendar clock interrupt.

Access: \*.\* - WAR - Ring 0.

6. Processor Base Segment - BK.1.04

Contains fault and intercept vectors. Interfaces Multics with fault interrupt hardware of the GE 645 processors.

Access: (1) \*.Ring 0 programmer.\* - WR - Ring 0.  
(2) \*.\* - R - Ring 0.

7. Processor Communication Table - BK.4.01

Used to generate inter-processor communication signals.

Access: \*.\* - WR - Ring 0.

8. Device Signal Table - BQ.6.07

Contains one entry for each device which is attached to the system and which may be under control of some process.

Access: \*.\* - WAR - Ring 0.

9. Active Meter Table

A scratchpad to hold metering information until it can be updated to paged storage.

Access: \*.\* - WR - Ring 0.

10. Process Wait Table - BG.15.01

Contains a list of all processes currently waiting in the process wait and notify module and events they are waiting on.

Access: \*.\* - WR - Ring 0.

E. GIM Directory

1. Class Driving Tables - BF.20.01

Contains information about forming the DCW and CCW lists for a particular device and the restrictions imposed on the lists for that device to insure security of the I/O System.

Access: (1) \*.\* - R - Ring 0.

(2) \*.Ring 0 programmer.\* - WAR - Ring 0.

2. Hardcore I/O System Static Storage - BF.20.09

Contains system parameters relevant to GIOC operation.

Access: (1) \*.Ring 0 programmer.\* - WAR - Ring 0.

(2) \*.\* - R - Ring 0.

3. GIOC Mailbox Area - BF.20.09

One area for each GIOC. Used for GIOC activation and control.

Access: \*.\* - WR - Ring 0.

4. GIOC DCW Area - BF.20.09

Area where DCW's are kept. Also contains:

a. Connect Logical Channel Table (BF.20.11) which contains pointers and a queue for a given connect channel.

b. Status Logical Channel Table - BF.20.11

A logical channel table for a status channel.

Access: \*.\* - WR - Ring 0.

5. GIOC Data Area - BF.20.09

Used for a user's data buffer area.

Access: \*.\* - WR - Ring 0.

6. Channel Assignment Table - BF.20.09

Contains information relating each GIOC and device to the Multics configurations.

Access: \*.\* - WAR - Ring 0.

7. Channel Status Table - BF.20.09

An extension of the GIOC hardware status queues.

Access: \*.\* - WAR - Ring 0.

8. Device Configuration Table - BF.3.10

Contains information pertaining to each individually assignable I/O device available to Multics.

Access: (1) \*.\* - R - Ring 0.

(2) \*.Ring 0 programmer.\* - WAR - Ring 0.

9. Logical Channel Tables - BF.20.10

Contains all information relating to a DIM's lists, hardware channel status, Class Driving Tables allowed, GIOC to be used. Also contains:

a. Pseudo - lists

b. List Status Tables - BF.20.09

Information on lists used to make pseudo-lists for a device.

Access: (1) \*.\* - WAR - Ring 0.

(2) \*.Ring 0 programmer.\* - WAR - Ring 0.

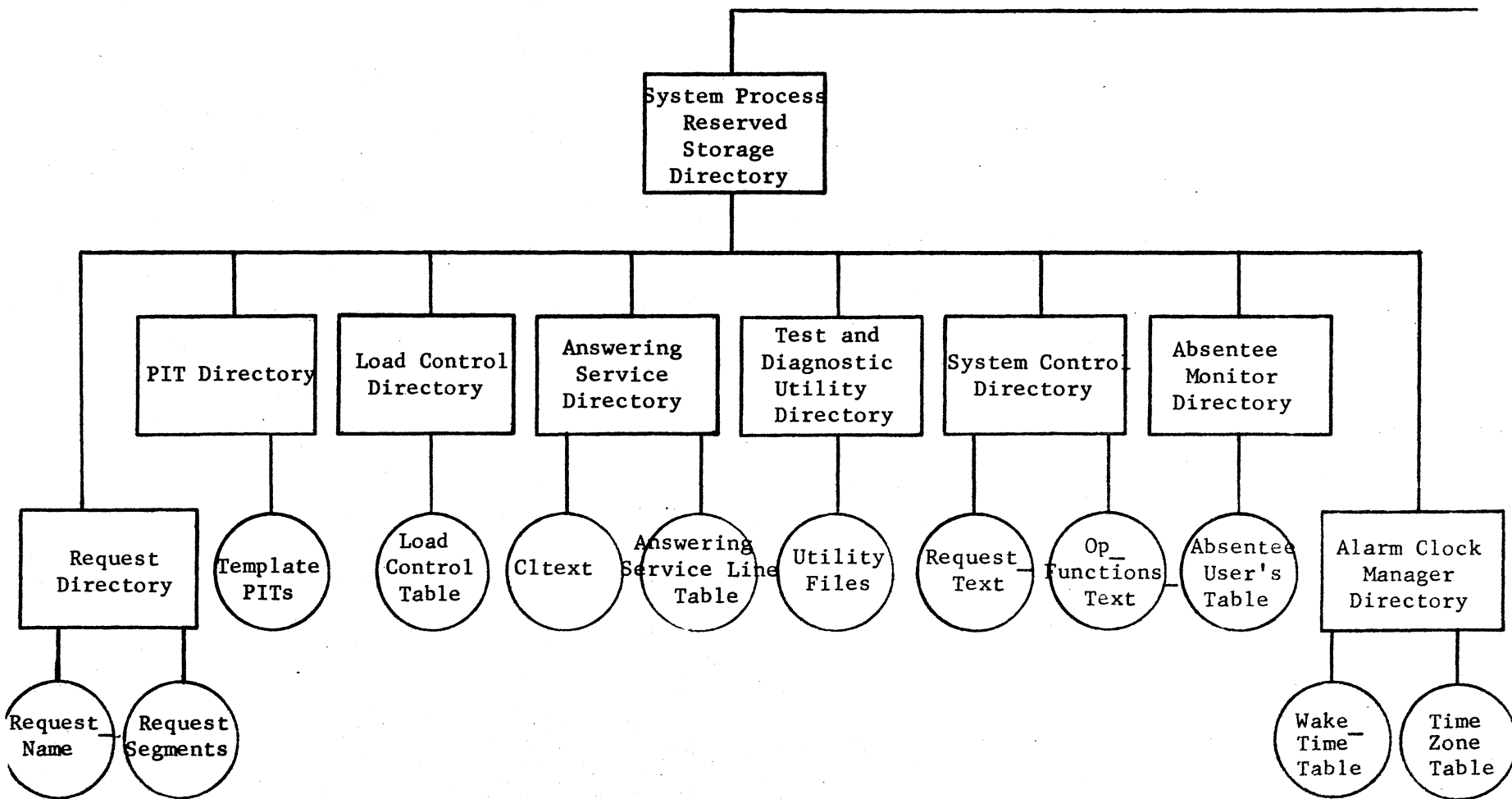
Other Data Bases

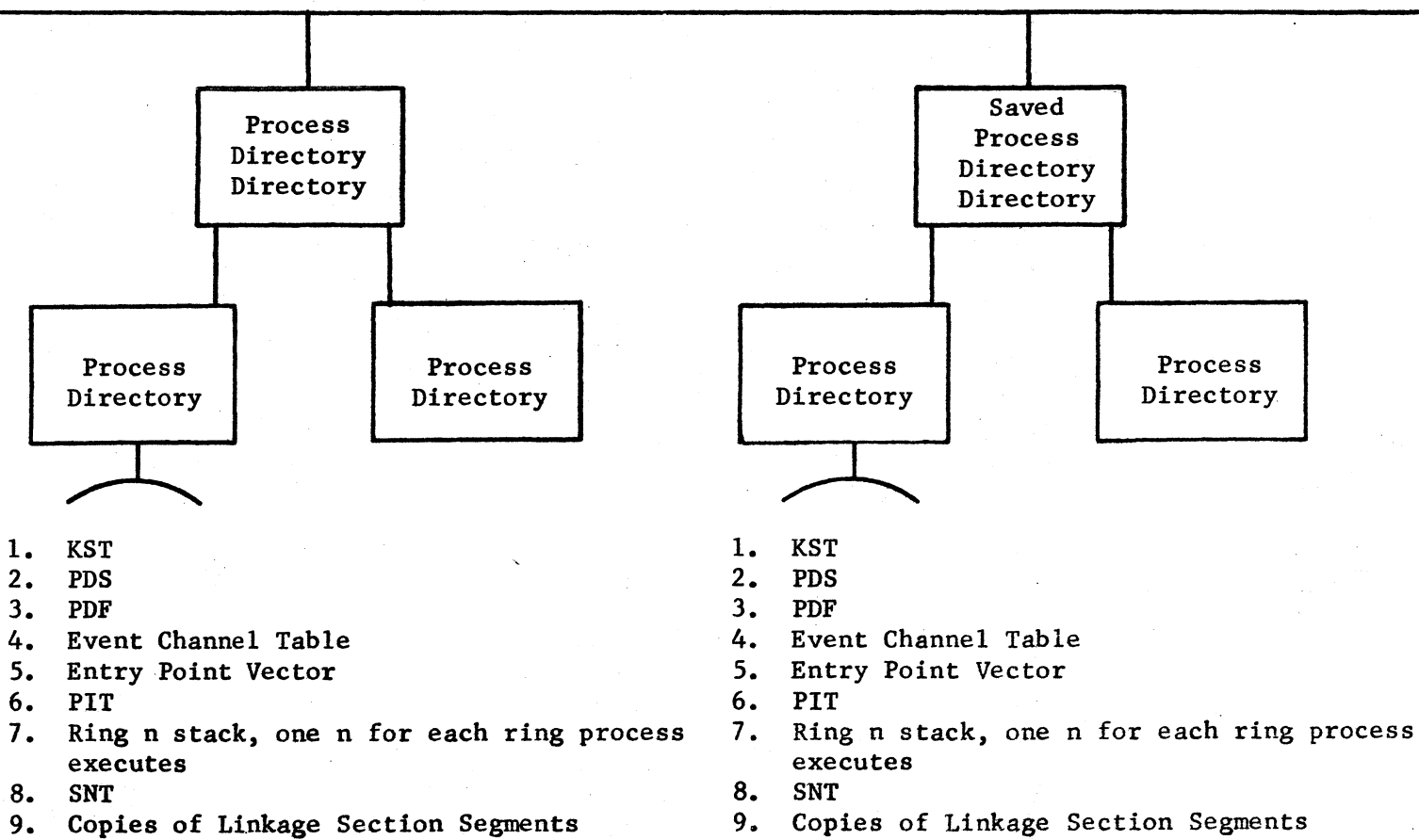
The following data bases or storage areas are not kept in the directory system:

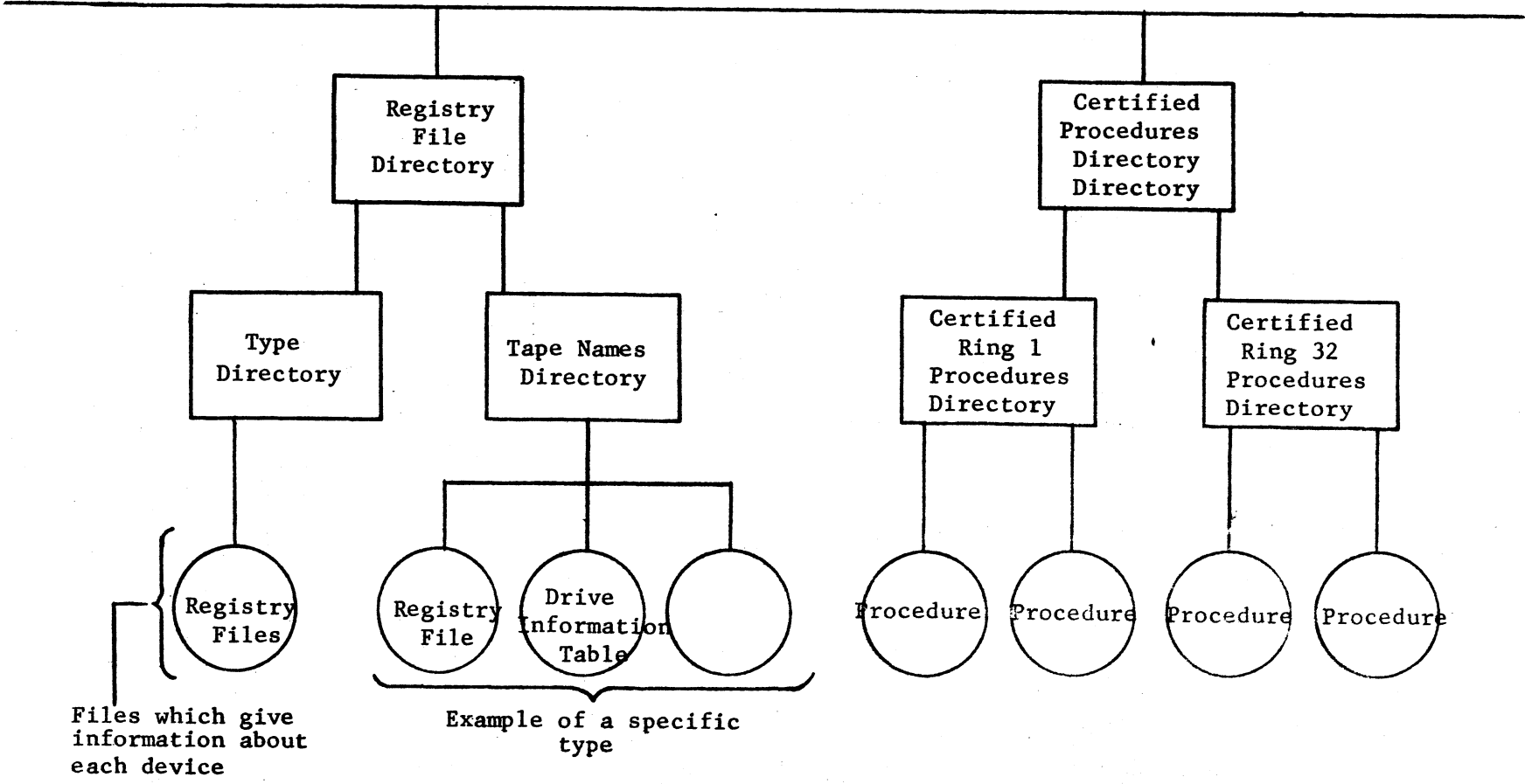
1. Free Storage Maps - BG.10.00

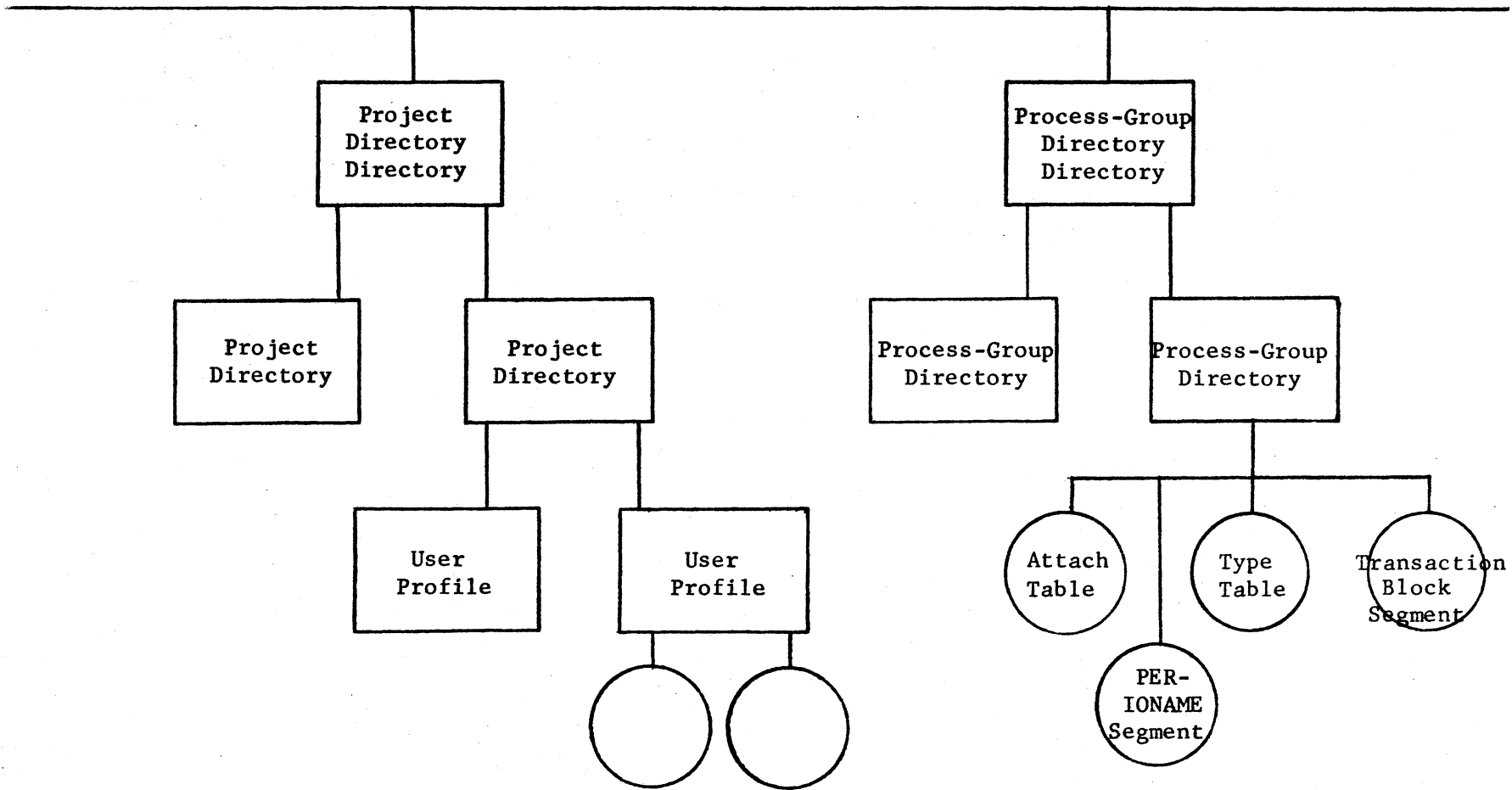
A list of addresses of free sectors on a storage device. One per device and kept on that device.

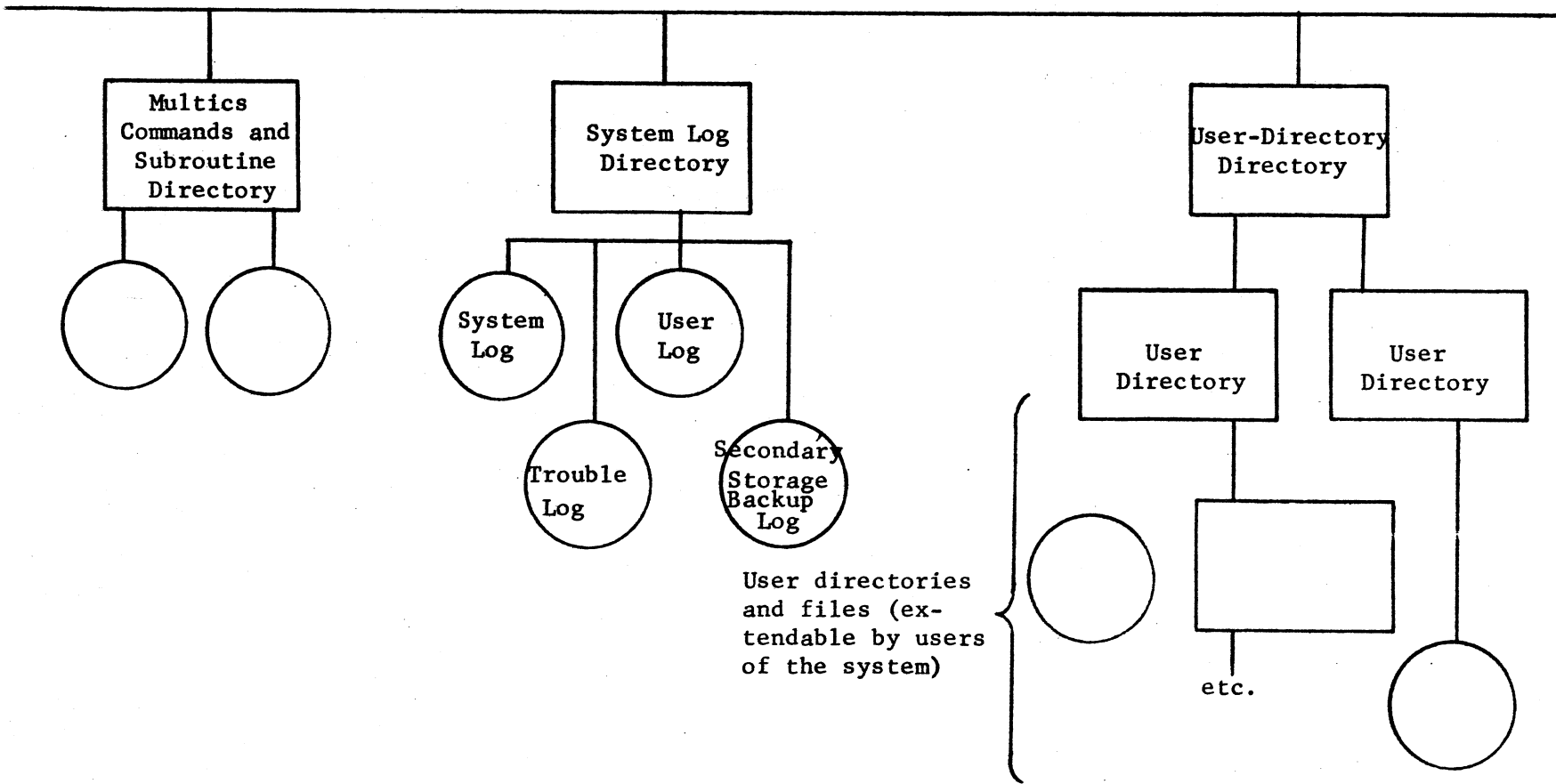


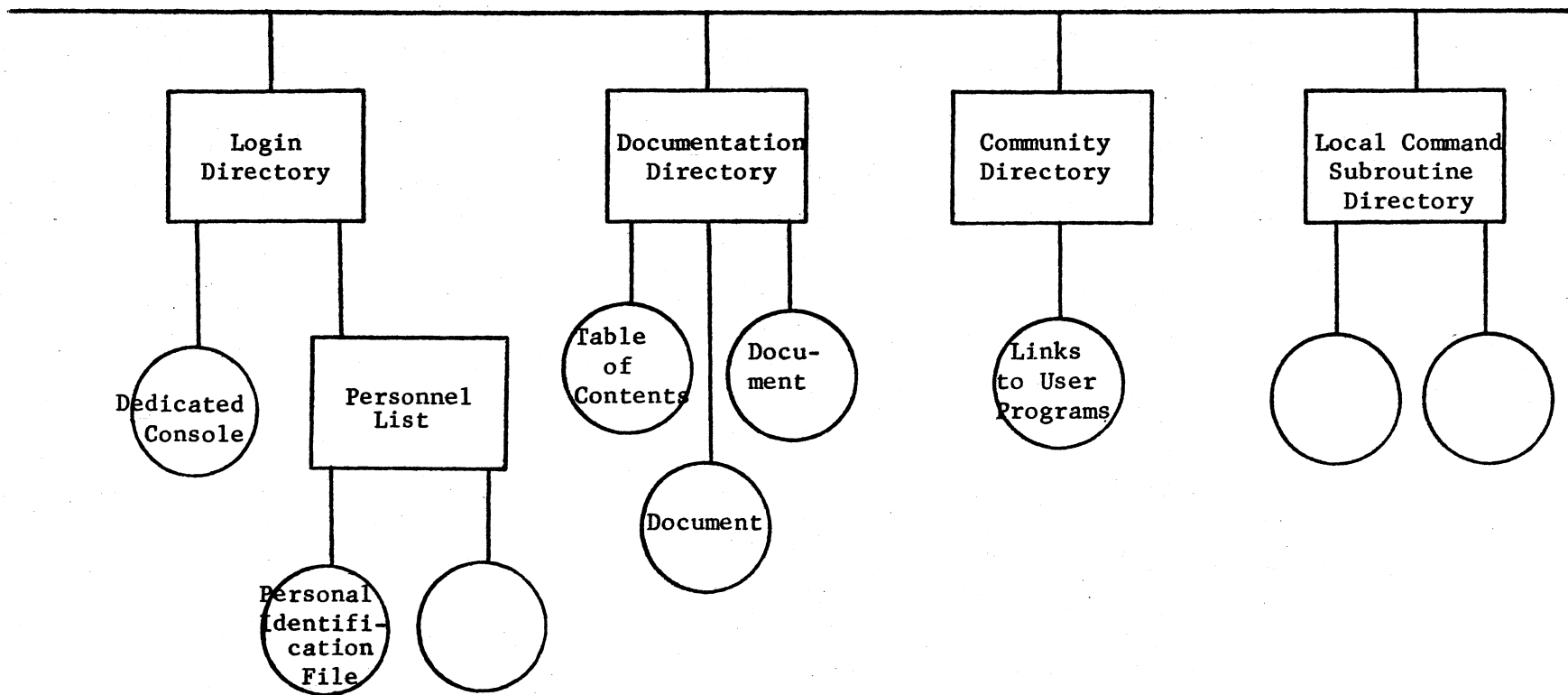


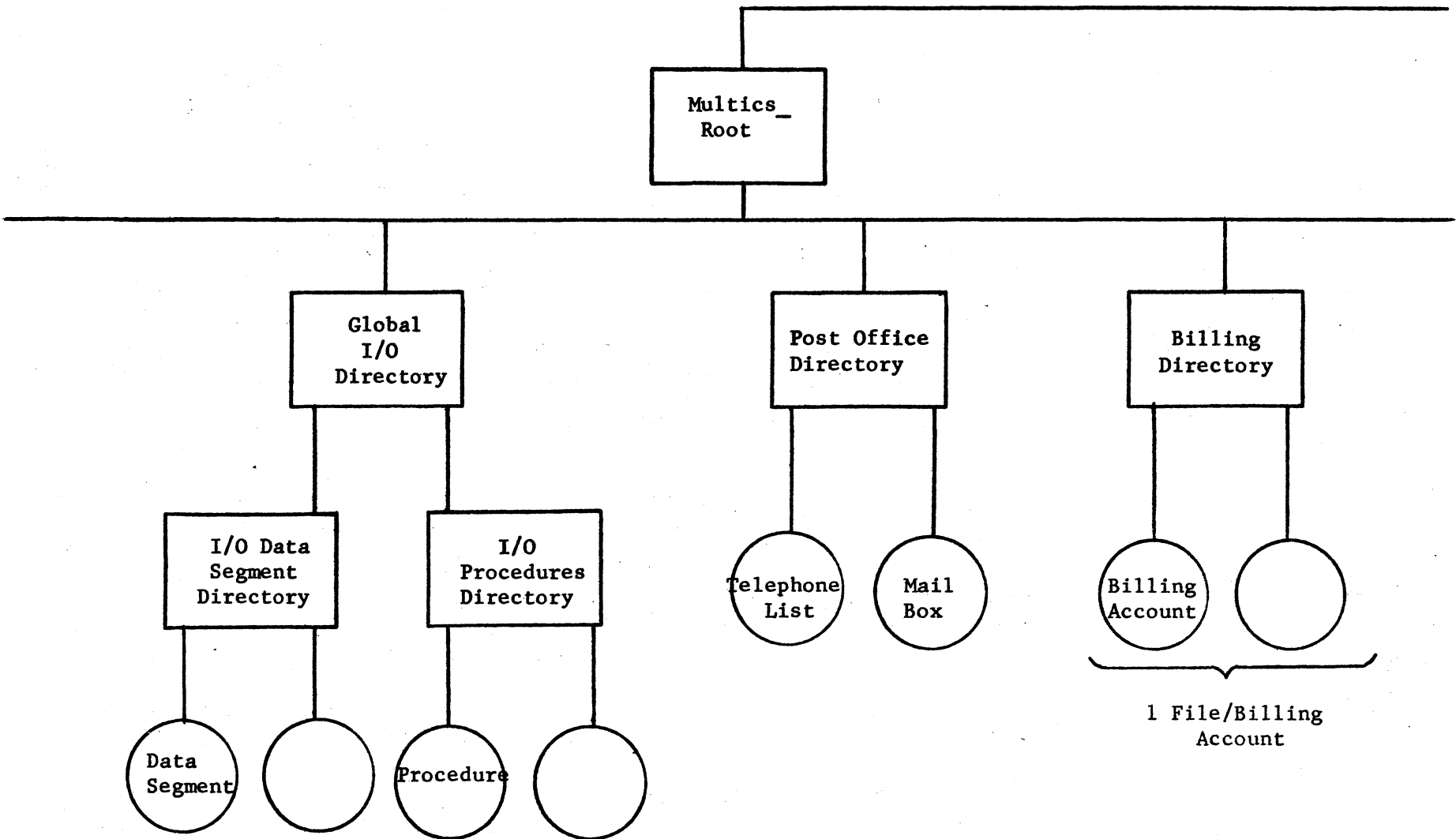


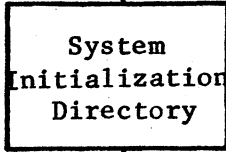
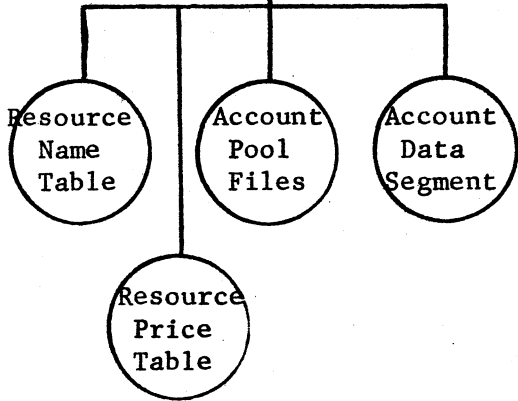
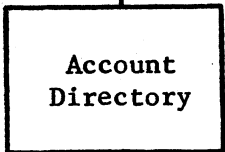
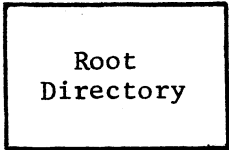












1. Segment Loading Table
2. Physical Record Buffer
3. File System Device Configuration Table
4. Multics Initializer's Descriptor Segment
5. Software Parameter Table
6. Initialization Constants Table
7. Major Module Configuration Table

