Index

A

ACPTBAD routine, 58, 62
ANSI standard labels, 17
Architecture, 4
assign command
  COS blocking mode, 79
  foreign data conversion, 56
  Fortran procedures, 43, 45, 57, 67
  processing class, 75
  usage, 41
Autoloaders, 3

B

Bad data, 58
Basic tape procedures, 25
Block size definition, 2
Blocked file section definition, 90
Blocks
  identifiers, 130
  length, 22
  read/write (maximum), 90
  tape positioning, 44
Buffered I/O, 91
Bypass-label processing definition, 6
Byte stream file definition, 90

C

C applications, 81, 122
C examples
  ctl_extsts structure, 108
  ctl_rdlog structure, 113
  data block size, 116
  dmn_comm structure, 118
  ER90 devices, 93–95
  executing cexam2.c, 85
  flexible file I/O usage, 82
  IBM compatible devices, 93, 95
  library routine usage, 82
  reading tape files, 93, 94
  synchronizing your program with a tape, 118
  table header, 96
  tape information table usage, 97
  TPC_EXTSTS request, 109, 111
  TPC_RDLOG request, 113, 115
  TR_INFO request, 100, 104
  transparent buffered I/O, 91, 92
  writing tape files, 95
Cassettes, 23
cd command, 34, 35
CDC data types, 50
CDC2CRAY routine, 51
Character-special tape interface, 3, 121
CHECKTP routine, 65
CLOSE statement, 63
close system call, 5
CLOSEV routine, 65
Closing tape files, 25, 122
Commands, 32
  assign
    COS blocking mode, 79
    Fortran applications, 79
    Fortran procedures, 41, 45, 47, 49, 52, 57, 67, 70, 73
    processing class, 75
    tape marks, 43
  cd, 34, 35
  cp, 32, 36
  cpio, 35
  dd, 33
  f90, 41, 43, 45, 52, 57, 70, 73, 77, 79
  man command, 25
  msgi, 31

msgr, 31
qsub, 27
rls
basic procedure, 25, 31
contents display, 29
Fortran applications, 42, 44, 45, 52, 57, 67, 70, 73, 76, 77, 80
tutorial procedures, 33–38
rsv
basic procedure, 25
contents display, 29
Fortran applications, 41, 43, 44, 46, 49, 52, 56, 67, 70, 73, 77, 79
tape log, 30
tutorial procedures, 32–35, 37
segldr, 77
target, 36
tpformat, 25
tplist, 29
tpmnt
basic procedure, 25, 31
concatenated files, 35
contents display, 29
creating tapes, 17
ER90 devices, 38
Fortran applications, 41, 43, 45, 47, 49, 52
multifile tapes, 36
system buffering, 8
tape formats, 11
tutorial procedures, 32–36
tprst, 28
tpstat, 25, 29
Communications, 6
Computer systems, 3, 89
Concatenated tape files
EOV status, 7
tpmnt command, 35
Copying files, 32, 33
COS blocking mode, 79
cp command, 32, 36
cpio command, 35
CRAY J90 series, 90
Cray Research systems, 3, 89
CRAY2CDC routine, 51
CRAY2IBM routine, 51
CRAY2IEG routine, 51
CRAY2NVE routine, 51
CRAY2VAX routine, 51
ctl_extsts structure, 108
ctl_rdlog structure, 113

D

Data conversion, 50
Data types, 50
dd command, 33
Default tape formats, 24
Definitions, 2, 6, 24, 90
Device group definition, 2
Device name definition, 2
Device type definition, 2
Devices, 3
Diagrams, 4, 11, 130
Directives
#define MAXPATH, 99
#define TR_INFO, 104
#define U_REQPIPE, 99
#define USER_DIR, 99
dmn_comm structure, 117

E

End-of-tape detection, 6
ENDSP routine, 65
Environment variables, 99
EOF1 labels, 13, 16, 19
EOF2 labels, 13, 17, 21
EOV processing, 7, 65, 84, 116
EOV1 labels, 13, 16, 19
EOV2 label, 17
EOV2 labels, 13, 21
ER90 devices, 11, 23, 25, 38, 41, 75, 81, 90
Error-handling routines, 58

Errors
hardware error codes, 144
I/O request codes, 123
messages, 147
Examples, 42
(See also C examples), 82
creating a tape, 26
new files, 27
NQS tape job, 27
reading tape files, 27
tape.msg listing, , 31
tplist status display, 30
tprst status display, 28
tpstat status display, 29
Explicit data conversion, 50
External ID definition, 3

F

f90 command, 41, 43, 45, 52, 57, 67, 70, 73, 77, 79
ffbksp routine, 81
ffclose routine, 81
fffcntl routine, 82, 84
ffopen routine, 81
ffpos routine, 82, 84
ffread routine, 81
ffseek routine, 81
ffweof routine, 81
ffwrite routine, 81
File identifier definition, 2
Files
(See character-special tape), 122
Flexible file I/O (FFIO), 9, 81
Foreign data conversion, 50
Format ID definition, 3
Format IDs, 24
Formats, 11
Fortran applications, 41
Fortran examples
ACPTBAD routine, 61
block positioning, 45
COS blocking mode, 79
EOV processing, 67, 70
foreign data, 56
IBM format conversion, 52
ISHELL routine, 63
mixed data types, 55
pure data mode, 77
reading a multivolume file, 72
reading tape marks, 44
SETTP positioning, 48, 50
SKIPBAD routine, 59
unknown number of records, 54
unlabeled tapes, 42
writing tape marks, 44
Front-end
catalog, 36
servicing, 7

G

GETPOS routine, 76
GETTP routine, 67
GigaRing support, 3

H

Hardware, 3
Hardware error codes, 144
HDR1 labels, 13, 16, 19
HDR2 labels, 13, 16, 21

I

I/O
C applications, 89
flexible file I/O, 81
usage, 122
IBM compatible devices, 41, 89
IBM compatible tape format, 11
IBM data types, 50

IBM standard labels, 17
IBM2CRAY routine, 51
IEEE data types, 50
IEG2CRAY routine, 51
Implicit data conversion, 50, 56
ioctl system call
  requests, 107, 121
  TPC_ACKERR request, 91
  TPC_DMN_REQ request, 117
  TPC_EXTSTS request, 107
  TPC_RDLOG request, 107, 113, 115
  TPC_SDBSZ request, 90, 116
IOS Model E (IOS-E), 3
ISHELL routine, 63

J

Job ID definition, 2

L

Label support, 6
Label types, 2, 17
Library routines
  EOV processing, 65
  ffbksp, 81
  ffclose, 81
  fffcntl, 82, 84
  ffopen, 81
  ffpos, 82
  ffread, 81
  ffseek, 81
  ffweof, 81
  ffwrite, 81
Loaders, 3
Log files, 30
Logical volumes, 24

M

MAC label, 38
man command, 25
Management applications, 121
Mandatory access control label, 38
Messages
  error, 147
  operator, 31
  system, 147
mknod system call, 99
Mounting tapes, 25
msgi command, 31
msgr command, 31
MTBSF operation code, 129, 128
MTBSR operation code, 129, 128
MTCLRLOG operation code, 129, 128
MTEXTS operation code, 128, 136
MTFMT operation code, 128, 137
MTFSF operation code, 129, 128
MTFSR operation code, 129, 128
MTGABS operation code, 130, 128
MTGFMT operation code, 128, 139
MTGPOS operation code, 132, 128
MTIOCACKERR request, 124
MTIOCATTR request, 124
MTIOCGET request, 124, 125
MTIOCTOP request, 124, 127
MTMSG operation code, 128, 144
MTOFFL operation code, 129, 128
MTPABS operation code, 130, 128
MTRDLOG operation code, 129, 128
MTREW operation code, 129, 128
MTSEEK operation code, 128, 135
MTSYNC operation code, 129, 128
MTTRACE operation code, 128, 143
MTVERIFY operation code, 128, 142
MTWEOF operation code, 129, 128
Multifile tapes
  multivolume, 14
  single-volume, 14
Multifile volume allocation, 7, 36

Multilevel security
MLS considerations, 25
references, 9

N

Nonlabeled tapes, 6, 11
NOS/VE data types, 50
NVE2CRAY routine, 51

O

open system call, 5
Opening files, 122
OPTIONS statement, 39
Owner ID field, 17

P

Partition definition, 24
Path name definition, 2
Performance, 8
Pipes, 5
Positioning, 7, 44
Pure data mode, 76

Q

qsub command, 27

R

read system call, 9, 91, 92
Reading tape files, 25, 35, 36, 41, 73
Record length definition, 3
Recovery routines, 58
Releasing tapes, 25
Reserving tapes, 25
rls command
basic procedure, 25, 31
contents display, 29
Fortran applications, 42, 44, 45, 52, 57, 67, 70, 73, 76, 77, 80
tutorial procedures, 33–38
rsv command
basic procedure, 25
contents display, 29
Fortran applications, 41, 43, 44, 46, 49, 52, 56, 67, 70, 73, 77, 79
Fortran procedures, 73
tape log, 31
tutorial procedures, 32–35, 37

S

Security, 25
segldr, 77
SETPOS routine, 66, 76
SETSP routine, 65
SETTP routine, 46, 49, 76
Single tape mark format, 6, 12
SKIPBAD routine, 58, 59
SKIPF routine, 76
Standard commands
(See Commands), 32
Standard level field, 17
STARTSP routine, 65
Status
tape information, 25, 107
tplist command, 29
tprst command, 28
tpstat command, 29
System call I/O, 89
System calls, 91
System messages, 147
System zone definition, 24

T

Table header, 96
Tape daemon
  requests, 99
Tape daemon-assisted interface, 3
Tape devices, 90
Tape formats, 11
Tape information table, 96
Tape interfaces, 3, 121
Tape marks, 11, 43
Tape performance, 8
Tape positioning
  Fortran applications, 44, 46
  processing positioning, 38
Tape subsystem features, 4
Tape usage
  basic procedures, 25
  creating a tape, 26
  new files, 27
  NQS tape job, 27
  reading tape files, 27
  tape status, 28
tape.msg file, 30
target command, 36
Terminology, 2
$TMPDIR environment variable, 99
TPC_ACKERR request, 91
TPC_DMN_REQ request, 117
TPC_EXTSTS request, 107, 109, 111
TPC_RDLOG request, 107, 113, 115
TPC_SDBSZ request, 90, 116
tpdaemon command, 121
tpformat command, 25
tplist command, 29
tpmnt command
  basic procedure, 25, 31
  concatenated files, 35
  contents display, 29
  creating tapes, 17
  ER90 devices, 38
  Fortran applications, 41, 43, 45, 47, 49, 52, 79
  multifile tapes, 36
  system buffering, 8
  tape formats, 11
  tutorial procedures, 32–36
tprst command, 28
tpstat command, 25, 29
TR_INFO request, 100, 104
Transparent I/O, 90–92
Tutorial, 25

U

Unbuffered blocked requests, 92
Unbuffered byte streams, 92
Unbuffered I/O, 92
UNICOS commands, 25
UNICOS/mk commands, 25
UNIX commands, 121
User EOV processing, 7

V

VAX/VMS data types, 50
VAX2CRAY routine, 51
VOL1 labels, 13, 16, 17
Volume ID field, 17
Volume IDs, 3
Volume serial number, 76
VSN, 76

W

write system call, 6, 9, 91
Writing tape files, 25, 35, 41, 70