x coordinate, 4-38
y coordinate, 4-38

X

X server, reset operations, 14-177
X Window System, overview, 1-1—1-3

saver, 14-180—14-182
white pixel, 3-34
width, 3-34
width in millimeters, 3-34

selection, 11-115—11-118

:selection-clear event, 12-155

:selection-notify event, 12-156

:selection-request event, 12-156

server
grabbing, 14-169
resource, 13-161
resource ID of display, 2-28

shell
popping down, 208
popping up, 208

side-effect events, 12-119
events returned, 12-119

stacking order of window, 4-45—4-46

stacking priority of window, 4-43

stipple
attribute of graphics context, 5-65
best, graphics context, 5-67

structure control events, 12-152—12-154

subwindow-mode attribute of graphics context, 5-66

T

text
drawing, 6-75—6-80
size querying, 8-97—8-98

tile, 1-2
attribute of graphics context, 5-66
best, graphics context, 5-67

ts-x attribute of graphics context, 5-67

ts-y attribute of graphics context, 5-67

U

:unmap-notify event, 12-151

unmapping windows, 4-47—4-49

V

vendor
display, 2-28
name of display, 2-28

version number of display, 2-28

:visibility-notify event, 12-152

visual type of window, 4-43

visual types, classes supported, 3-31

visuals, 3-31

W

white pixel of screen, 3-34

width
attribute of window, 4-37
screen, 3-34
screen in millimeters, 3-34

window, 4-35—4-52
attribute
background, 4-38
backing-pixel, 4-39
backing-planes, 4-39
backing-store, 4-39
bit-gravity, 4-39
border, 4-40
border-width, 4-37
colormap, 4-40
cursor, 4-41
depth, 4-37
do-not-propagate-mask, 4-41
event-mask, 4-41
gravity, 4-41
height, 4-37
override-redirect, 4-42
save-under, 4-43
width, 4-37
attributes, 4-37
batching, 2-29, 4-43
reader and setf functions, 4-45
class, 4-40
creating, 4-35
destroying, 4-49
display object, 4-41
event masks, 4-38
hierarchy, 4-46—4-47
ID, 4-42
map state, 4-42
mapping, 4-47—4-49
obscure, 1-2
property list, 4-43
stacking order, 4-45—4-46
stacking priority, 4-43
state events, 12-147—12-152
unmapping, 4-47—4-49
visual type, 4-43

map state of window, 4-42
:mapping-notify event, 12-144
mapping windows, 4-47—4-49
motion buffer size of display, 2-26
:motion-notify event, 12-137
mouse, behavior, 14-170—14-173

N

:no-exposure event, 12-146
number of display, 2-24

O

obscuring window, 1-2
output buffer management, 2-29
override-redirect attribute of window, 4-42

P

path list, 13-161
pixmap, 1-2, 4-35—4-52
  formats of display, 2-26
plane, 6-69—6-71
plane-mask attribute of graphics context, 5-64
pointer
  button
    obtaining, 14-170—14-173
    setting, 14-170—14-173
  control, 14-169—14-170
  events, 12-136—12-140
  grabbing, 12-130—12-131
  position, 12-126—12-128
  state event, 12-144
points, drawing, 6-71
property, 11-112—11-115
property list
  display, 2-27
  screen, 3-33
  window, 4-43
:property-notify event, 12-155
protocol
  major version of display, 2-27
  minor version of display, 2-27
  version of display, 2-27

R

rectangles, drawing, 6-73
:reparent-notify event, 12-151
reply, 1-2
representation type, standard conversions, 4-45
request maximum length of display, 2-26
:resize-request event, 12-154
resource, 13-161—13-168
  accessing, 13-163—13-166
  binding, 13-161—13-162
    examples, 13-162
  complete class, 13-163
  complete name, 13-163
  database, 13-161, 13-162—13-163
    files, 13-166
  matching, 13-164
  name, 13-161
  search table, 13-165
  server, 13-161
resource-id
  base of display, 2-27
  mask of display, 2-28
root, 1-2
  depth of screen, 3-34
  display, 2-28
  event mask of screen, 3-32
  visual type of screen, 3-34
  window of screen, 3-33

S

save-under attribute of window, 4-43
save-unders-p attribute of screen, 3-34
screen, 1-2, 3-31—3-34
  attributes, 3-31—3-34
  backing-stores attribute, 3-32
  black-pixel attribute, 3-32
  colormap, default, 3-32
  colormaps maximum number, 3-33
  colormaps minimum number, 3-33
  depths, 3-32
  event mask root, 3-32
  height, 3-33
  height in millimeters, 3-33
  property list, 3-33
  root depth, 3-34
  root visual type, 3-34
  root window, 3-33
  save-unders-p attribute, 3-34

background, 5-56
cap-style, 5-56
clip-mask, 5-57
clip-x, 5-58
clip-y, 5-58
dash-offset, 5-58
dashes, 5-58
exposures, 5-59
fill-rule, 5-59
fill-style, 5-60
font, 5-61
foreground, 5-61
function, 5-61
logical operation codes, 5-62
join-style, 5-62
line-style, 5-63
line-width, 5-63
plane-mask, 5-64
stipple, 5-65
best, 5-67
subwindow-mode, 5-66
tile, 5-66
best, 5-67
ts-x, 5-67
ts-y, 5-67
attributes, 5-55—5-67
cache, 5-68
components, default values, 5-55
copying, 5-67
creating, 5-54—5-55
destroying, 5-68
local cache mode, 5-56

:graphics-exposure event, 12-146

gravity attribute of window, 4-41

:gravity-notify event, 12-150

H

height
attribute of window, 4-37
screen, 3-33
screen in millimeters, 3-33

host, managing access, 14-179—14-180

I

ID, window, 4-42

image, 7-81—7-88
leftmost bit of display, 2-25

input
event, 1-2
focus events, 12-140—12-143

J

join-style attribute of graphics context, 5-62

K

key
auto-repeat, 14-170—14-173
click, 14-170—14-173
grabbing, 12-134—12-160

:key-press event, 12-136

:key-release event, 12-136

keyboard
bell, 14-170
bit vector, 14-170—14-173
control, 14-170—14-173
encodings, 14-173—14-176
events, 12-136—12-140
grabbing, 12-133—12-134
mapping, 14-170—14-173, 14-174—14-175
state event, 12-144

keycode
maximum value of display, 2-26
minimum value of display, 2-26
range of display, 2-25

keycodes, 14-173—14-174
usage, 14-175—14-176

:keymap-notify event, 12-144

keysyms, 14-173—14-174
usage, 14-175—14-176

L

:leave-notify event, 12-138
example, 1-9

line-style attribute of graphics context, 5-63

line-width attribute of graphics context, 5-63

lines, drawing, 6-71—6-73

M

:map-notify event, 12-150

:map-request event, 12-154

:focus-out, 12-140
grabbing
button, 12-132—12-133
key, 12-134—12-160
keyboard, 12-133—12-134
pointer, 12-130—12-131
:graphics-exposure, 12-146
:gravity-notify, 12-150
input, 1-2
input focus, 12-140—12-143
:key-press, 12-136
:key-release, 12-136
keyboard, 12-136—12-140
state, 12-144
:keymap-notify, 12-144
:leave-notify, 12-138
example, 1-9
managing
event queue, 12-124—12-125
input focus, 12-128—12-129
:map-notify, 12-150
:map-request, 12-154
:mapping-notify, 12-144
:motion-notify, 12-137
:no-exposure, 12-146
pointer, 12-136—12-140
position, 12-126—12-128
state, 12-144
processing, 12-122—12-124
:property-notify, 12-155
:reparent-notify, 12-151
:resize-request, 12-154
selecting, 12-120—12-121
:selection-clear, 12-155
:selection-notify, 12-156
:selection-request, 12-156
sending, 12-125—12-126
side-effect, 12-119
events returned, 12-119
structure control, 12-152—12-154
types, 12-135—12-158
declaring, 12-157
:unmap-notify, 12-151
:visibility-notify, 12-152
window state, 12-147—12-152

event mask
keywords, 12-121
event types selected, 12-121
root of screen, 3-32

event-mask, attribute of window, 4-41

event masks, window, 4-38

examples, CLX. *See* CLX examples

:exposure event, 12-145
example, 1-9

exposure events, 12-145—12-147

exposures attribute of graphics context, 5-59

extensions, 15-183—15-184

F

fill-rule attribute of graphics context, 5-59

fill-style attribute of graphics context, 5-60

:focus-in event, 12-140

:focus-out event, 12-140

font, 8-89—8-98
attribute of graphics context, 5-61
attributes, 8-91—8-95
character attributes, 8-89, 8-96
closing, 8-89
listing, 8-90—8-91
opening, 8-89—8-90
querying text size, 8-97—8-98

foreground attribute of graphics context, 5-61

function attribute of graphics context, 5-61
logical operation codes, 5-62

G

glyphs, 8-89
drawing, 6-75—6-80

grab types, 12-120

grabbing
button, 12-132—12-133
key, 12-134—12-160
keyboard, 12-133—12-134
pointer, 12-130—12-131
server, 14-169

graphics, 6-69—6-80
area, 6-69—6-71
drawing
arcs, 6-74—6-75
glyphs, 6-75—6-80
lines, 6-71—6-73
points, 6-71
rectangles, 6-73
text, 6-75—6-80
plane, 6-69—6-71

graphics context, 5-53—5-68
attribute
arc-mode, 5-55

complete resource name, 13-163

conditions, CLX, 16-185

:configure-notify event, 12-148

:configure-request event, 12-153

control, 14-169—14-182
  client termination, 14-176—14-178
  grabbing the server, 14-169
  host access, 14-179—14-180
  keyboard, 14-170—14-173
  pointer, 14-169—14-170
  screen saver, 14-180—14-182

:create-notify event, 12-149

cursor, 10-107—10-110
  attribute of window, 4-41

D

dash-offset attribute of graphics context, 5-58

dashes attribute of graphics context, 5-58

default colormap of screen, 3-32

depth attribute of window, 4-37

depths of screen, 3-32

:destroy-notify event, 12-149

destroying windows, 4-49

device events, 12-119
  events returned, 12-119

display, 1-2, 2-23—2-30
  attributes, 2-24—2-29
  authorization
    data, 2-24
    name, 2-24
  bitmap format, 2-24
  byte order, 2-24
  closing, 2-29
  error handler, 2-25
  image leftmost bit, 2-25
  keycode
    maximum value, 2-26
    minimum value, 2-26
    range, 2-25
  motion buffer size, 2-26
  number, 2-24
  opening, 2-23
  output buffer management, 2-29
  pixmap formats, 2-26
  property list, 2-27
  protocol
    major version, 2-27
    minor version, 2-27
    version, 2-27
  request maximum length, 2-26
  resource-id
    base, 2-27
    mask, 2-28
  roots, 2-28
  server resource ID, 2-28
  vendor, 2-28
    name, 2-28
  version number, 2-28
  window object, 4-41

do-not-propagate-mask attribute of window, 4-41

drawable, 1-2, 4-35—4-52
  geometry
    reader and setf functions, 4-45
    values, batching, 4-43

drawing
  arcs, 6-74
  glyphs, 6-75—6-80
  lines, 6-71—6-73
  points, 6-71
  rectangles, 6-73
  text, 6-75

E

:enter-notify event, 12-138
  example, 1-9

error conditions, CLX, 16-185—16-190

error handler of display, 2-25

event, 1-2, 12-119—12-160
  :button-press, 12-136
  :button-release, 12-136
    example, 1-9
  :circulate-notify, 12-147
  :circulate-request, 12-152
  client communications, 12-155—12-157
  :client-message, 12-155
  :colormap-notify, 12-153
  :configure-notify, 12-148
  :configure-request, 12-153
  :create-notify, 12-149
  :destroy-notify, 12-149
  device, 12-119
    events returned, 12-119
  :enter-notify, 12-138
    example, 1-9
  :exposure, 12-145
    example, 1-9
  exposure, 12-145—12-147
  :focus-in, 12-140

General

A

access control list, 14-179

arc-mode attribute of graphics context, 5-55

arcs, drawing, 6-74—6-75

area of a window, 6-69—6-71

atom, 11-111—11-112

attribute name, 13-161

authorization
  data of display, 2-24
  name of display, 2-24

auto-repeat keys, 14-170—14-173

B

background attribute
  graphics context, 5-56
  window, 4-38

backing-pixel attribute of window, 4-39

backing-planes attribute of window, 4-39

backing-store attribute of window, 4-39

backing-stores attribute of screen, 3-32

bell, 14-170—14-173

bit-gravity attribute of window, 4-39

bit vector, keyboard, 14-170—14-173

bitmap, 1-2
  format of display, 2-24

black-pixel attribute of screen, 3-32

border attribute of window, 4-40

border-width attribute of window, 4-37

button, grabbing, 12-132—12-133

:button-press event, 12-136

:button-release event, 12-136
  example, 1-9

byte order of display, 2-24

C

cap-style attribute of graphics context, 5-56

character, 8-89—8-98
  attributes, 8-89, 8-96—8-97

:circulate-notify event, 12-147

:circulate-request event, 12-152

class, window, 4-40

classes of visual types supported, 3-31

client, 1-2
  communications events, 12-155—12-157
  termination, 14-176—14-178

:client-message event, 12-155

clip-mask attribute of graphics context, 5-57

clip-x attribute of graphics context, 5-58

clip-y attribute of graphics context, 5-58

CLX
  error conditions, 16-185—16-190
  examples, 1-3—1-11
    calculating menu size, 1-6
    creating menu window, 1-5
    creating subwindows, 1-5
    definition of menu structure, 1-3
    drawing/redrawing menus, 1-7
    main client program, 1-10
    menu processing of user input, 1-8
  overview, 1-1—1-22
  xatom objects, 11-111

color, 9-99—9-108
  allocating, 9-103—9-105
  changing, 9-99, 9-105—9-106
  creating, 9-99
  finding, 9-105

colormap, 9-99—9-108
  accessors, 9-107
  attribute of window, 4-40
  creating, 9-101—9-102
  installing, 9-102—9-103
  maximum number for screen, 3-33
  minimum number for screen, 3-33
  screen default, 3-32

:colormap-notify event, 12-153

complete resource class, 13-163