Full credit is given to the above companies including the OS that this PDF file was generated!

Red Hat Enterprise Linux Release 9.2 Manual Pages on 'xorg.conf.5' command

$ man xorg.conf.5

xorg.conf(5) File Formats Manual xorg.conf(5)

NAME

xorg.conf, xorg.conf.d - configuration files for Xorg X server

INTRODUCTION

Xorg supports several mechanisms for supplying/obtaining configuration and run-time parameters: command line options, environment variables, the xorg.conf and xorg.conf.d configuration files, auto-detection, and fallback defaults. When the same information is supplied in more than one way, the highest precedence mechanism is used. The list of mecha? nisms is ordered from highest precedence to lowest. Note that not all parameters can be supplied via all methods. The available command line options and environment variables (and some defaults) are described in the Xserver(1) and Xorg(1) manual pages. Most configuration file param? eters, with their defaults, are described below. Driver and module spe? cific configuration parameters are described in the relevant driver or module manual page.

DESCRIPTION

Xorg uses a configuration file called xorg.conf and files ending in the suffix .conf from the directory xorg.conf.d for its initial setup. The xorg.conf configuration file is searched for in the following places when the server is started as a normal user:

/etc/X11/<cmdline>

/usr/etc/X11/<cmdline>

/etc/X11/$XORGCONFIG

/usr/etc/X11/$XORGCONFIG

/etc/X11/xorg.conf

/etc/xorg.conf

/usr/etc/X11/xorg.conf.<hostname>

/usr/etc/X11/xorg.conf

/usr/lib/X11/xorg.conf.<hostname>

/usr/lib/X11/xorg.conf

where <cmdline> is a relative path (with no ?..? components) specified with the -config command line option, $XORGCONFIG is the relative path (with no ?..? components) specified by that environment variable, and <hostname> is the machine's hostname as reported by gethostname(3).

When the Xorg server is started by the ?root? user, the config file search locations are as follows:

<cmdline>

/etc/X11/<cmdline>

/usr/etc/X11/<cmdline>

$XORGCONFIG

/etc/X11/$XORGCONFIG

/usr/etc/X11/$XORGCONFIG

/etc/X11/xorg.conf

/etc/xorg.conf

/usr/etc/X11/xorg.conf.<hostname>

/usr/etc/X11/xorg.conf

/usr/lib/X11/xorg.conf.<hostname>

/usr/lib/X11/xorg.conf

where <cmdline> is the path specified with the -config command line op? tion (which may be absolute or relative), $XORGCONFIG is the path spec? ified by that environment variable (absolute or relative), $HOME is the path specified by that environment variable (usually the home direc? tory), and <hostname> is the machine's hostname as reported by gethost? name(3).

Additional configuration files are searched for in the following direc?

tories when the server is started as a normal user:

/etc/X11/<cmdline>

/etc/X11/<cmdline>

/etc/X11/xorg.conf.d

/etc/X11/xorg.conf.d

where <cmdline> is a relative path (with no ?..? components) specified with the -configdir command line option.

When the Xorg server is started by the ?root? user, the config direc? tory search locations are as follows:

<cmdline>

/etc/X11/<cmdline>

/etc/X11/<cmdline>

/etc/X11/xorg.conf.d

/etc/X11/xorg.conf.d

where <cmdline> is the path specified with the -configdir command line option (which may be absolute or relative).

Finally, configuration files will also be searched for in a directory reserved for system use. This is to separate configuration files from the vendor or 3rd party packages from those of local administration. These files are found in the following directory:

/usr/share/X11/xorg.conf.d

The xorg.conf and xorg.conf.d files are composed of a number of sec? tions which may be present in any order, or omitted to use default con? figuration values. Each section has the form:

```
Section "SectionName"
    SectionEntry
    ...
EndSection
```

The section names are:

Files	File pathnames
ServerFlags	Server flags
Module	Dynamic module loading
Extensions	Extension enabling

InputDevice Input device description

InputClass Input class description

OutputClass Output class description

Device Graphics device description

VideoAdaptor Xv video adaptor description

Monitor Monitor description

Modes Video modes descriptions

Screen Screen configuration

ServerLayout Overall layout

DRI DRI-specific configuration

Vendor Vendor-specific configuration

The following obsolete section names are still recognised for compati? bility purposes. In new config files, the InputDevice section should be used instead.

Keyboard Keyboard configuration

Pointer Pointer/mouse configuration

The old XInput section is no longer recognised.

The ServerLayout sections are at the highest level. They bind together the input and output devices that will be used in a session. The input devices are described in the InputDevice sections. Output devices usu? ally consist of multiple independent components (e.g., a graphics board and a monitor). These multiple components are bound together in the Screen sections, and it is these that are referenced by the ServerLay? out section. Each Screen section binds together a graphics board and a monitor. The graphics boards are described in the Device sections, and the monitors are described in the Monitor sections.

Config file keywords are case-insensitive, and ?_? characters are ig? nored. Most strings (including Option names) are also case-insensi? tive, and insensitive to white space and ?_? characters.

Each config file entry usually takes up a single line in the file.

They consist of a keyword, which is possibly followed by one or more arguments, with the number and types of the arguments depending on the keyword. The argument types are:

Integer an integer number in decimal, hex or octal

Real a floating point number

String a string enclosed in double quote marks (")

Note: hex integer values must be prefixed with ?0x?, and octal values with ?0?.

A special keyword called Option may be used to provide free-form data to various components of the server. The Option keyword takes either one or two string arguments. The first is the option name, and the op? tional second argument is the option value. Some commonly used option value types include:

Integer an integer number in decimal, hex or octal

Real a floating point number

String a sequence of characters

Boolean a boolean value (see below)

Frequency a frequency value (see below)

Note that all Option values, not just strings, must be enclosed in quotes.

Boolean options may optionally have a value specified. When no value is specified, the option's value is TRUE. The following boolean option values are recognised as TRUE:

1, on, true, yes

and the following boolean option values are recognised as FALSE:

0, off, false, no

If an option name is prefixed with "No", then the option value is negated.

Example: the following option entries are equivalent:

Option "Accel" "Off"

Option "NoAccel"

Option "NoAccel" "On"

Option "Accel" "false"

Option "Accel" "no"

Frequency option values consist of a real number that is optionally followed by one of the following frequency units:

Hz, k, kHz, M, MHz

When the unit name is omitted, the correct units will be determined from the value and the expectations of the appropriate range of the value. It is recommended that the units always be specified when using frequency option values to avoid any errors in determining the value.

FILES SECTION

The Files section is used to specify some path names required by the server. Some of these paths can also be set from the command line (see Xserver(1) and Xorg(1)). The command line settings override the values specified in the config file. The Files section is optional, as are all of the entries that may appear in it.

The entries that can appear in this section are:

FontPath "path"

sets the search path for fonts. This path is a comma separated list of font path elements which the Xorg server searches for font databases. Multiple FontPath entries may be specified, and they will be concatenated to build up the fontpath used by the server. Font path elements can be absolute directory paths, catalogue directories or a font server identifier. The formats of the later two are explained below:

Catalogue directories:

Catalogue directories can be specified using the prefix cat? alogue: before the directory name. The directory can then be populated with symlinks pointing to the real font directo? ries, using the following syntax in the symlink name:

<identifier>:[attribute]:pri=<priority>

where <identifier> is an alphanumeric identifier, [attri? bute] is an attribute which will be passed to the underlying FPE and <priority> is a number used to order the fontfile FPEs. Examples:

75dpi:unscaled:pri=20 -> /usr/share/X11/fonts/75dpi

gscript:pri=60 -> /usr/share/fonts/default/ghostscript

misc:unscaled:pri=10 -> /usr/share/X11/fonts/misc

Font server identifiers:

Font server identifiers have the form:

<trans>/<hostname>:<port-number>

where <trans> is the transport type to use to connect to the font server (e.g., unix for UNIX-domain sockets or tcp for a TCP/IP connection), <hostname> is the hostname of the ma? chine running the font server, and <port-number> is the port number that the font server is listening on (usually 7100).

When this entry is not specified in the config file, the server falls back to the compiled-in default font path, which contains the following font path elements (which can be set inside a cat? alogue directory):

/usr/share/fonts/X11/misc/

/usr/share/fonts/X11/TTF/

/usr/share/fonts/X11/OTF/

/usr/share/fonts/X11/Type1/

/usr/share/fonts/X11/100dpi/

/usr/share/fonts/X11/75dpi/

Font path elements that are found to be invalid are removed from the font path when the server starts up.

ModulePath "path"

sets the search path for loadable Xorg server modules. This path is a comma separated list of directories which the Xorg server searches for loadable modules loading in the order speci? fied. Multiple ModulePath entries may be specified, and they will be concatenated to build the module search path used by the server. The default module path is

/usr/lib64/xorg/modules

XkbDir "path"

sets the base directory for keyboard layout files. The -xkbdir command line option can be used to override this. The default directory is

/usr/share/X11/xkb

SERVERFLAGS SECTION

In addition to options specific to this section (described below), the ServerFlags section is used to specify some global Xorg server options. All of the entries in this section are Options, although for compati? bility purposes some of the old style entries are still recognised. Those old style entries are not documented here, and using them is dis? couraged. The ServerFlags section is optional, as are the entries that may be specified in it.

Options specified in this section (with the exception of the "Default? ServerLayout" Option) may be overridden by Options specified in the ac? tive ServerLayout section. Options with command line equivalents are overridden when their command line equivalent is used. The options recognised by this section are:

Option "Debug" "string"

This comma-separated list provides a way to control various de? bugging switches from the config file. At the moment the only defined value is dmabuf_capable which instructs glamor to enable some unstable buffer management code.

Option "DefaultServerLayout" "layout-id"

This specifies the default ServerLayout section to use in the absence of the -layout command line option.

Option "NoTrapSignals" "boolean"

This prevents the Xorg server from trapping a range of unex? pected fatal signals and exiting cleanly. Instead, the Xorg server will die and drop core where the fault occurred. The de? fault behaviour is for the Xorg server to exit cleanly, but still drop a core file. In general you never want to use this option unless you are debugging an Xorg server problem and know how to deal with the consequences.

Option "DontVTSwitch" "boolean"

This disallows the use of the Ctrl+Alt+Fn sequence (where Fn refers to one of the numbered function keys). That sequence is normally used to switch to another "virtual terminal" on operat?

ing systems that have this feature. When this option is en? abled, that key sequence has no special meaning and is passed to clients. Default: off.

Option "DontZap" "boolean"

This disallows the use of the Terminate_Server XKB action (usu? ally on Ctrl+Alt+Backspace, depending on XKB options). This ac? tion is normally used to terminate the Xorg server. When this option is enabled, the action has no effect. Default: off.

Option "DontZoom" "boolean"

This disallows the use of the Ctrl+Alt+Keypad-Plus and Ctrl+Alt+Keypad-Minus sequences. These sequences allows you to switch between video modes. When this option is enabled, those key sequences have no special meaning and are passed to clients. Default: off.

Option "DisableVidModeExtension" "boolean"

This disables the parts of the VidMode extension used by the xvidtune client that can be used to change the video modes. De? fault: the VidMode extension is enabled.

Option "AllowNonLocalXvidtune" "boolean"

This allows the xvidtune client (and other clients that use the VidMode extension) to connect from another host. Default: off.

Option "AllowMouseOpenFail" "boolean"

This tells the mousedrv(4) and vmmouse(4) drivers to not report failure if the mouse device can't be opened/initialised. It has no effect on the evdev(4) or other drivers. Default: false.

Option "BlankTime" "time"

sets the inactivity timeout for the blank phase of the screen? saver. time is in minutes. This is equivalent to the Xorg server's -s flag, and the value can be changed at run-time with xset(1). Default: 10 minutes.

Option "StandbyTime" "time"

sets the inactivity timeout for the standby phase of DPMS mode. time is in minutes, and the value can be changed at run-time

with xset(1). Default: 10 minutes. This is only suitable for VESA DPMS compatible monitors, and may not be supported by all video drivers. It is only enabled for screens that have the "DPMS" option set (see the MONITOR section below).

Option "SuspendTime" "time"

sets the inactivity timeout for the suspend phase of DPMS mode. time is in minutes, and the value can be changed at run-time with xset(1). Default: 10 minutes. This is only suitable for VESA DPMS compatible monitors, and may not be supported by all video drivers. It is only enabled for screens that have the "DPMS" option set (see the MONITOR section below).

Option "OffTime" "time"

sets the inactivity timeout for the off phase of DPMS mode. time is in minutes, and the value can be changed at run-time with xset(1). Default: 10 minutes. This is only suitable for VESA DPMS compatible monitors, and may not be supported by all video drivers. It is only enabled for screens that have the "DPMS" option set (see the MONITOR section below).

Option "MaxClients" "integer"

Set the maximum number of clients allowed to connect to the X server. Acceptable values are 64, 128, 256 or 512.

Option "NoPM" "boolean"

Disables something to do with power management events. Default: PM enabled on platforms that support it.

Option "Xinerama" "boolean"

enable or disable XINERAMA extension. Default is disabled.

Option "IndirectGLX" "boolean"

enable or disable indirect GLX contexts. Indirect GLX contexts are disabled by default.

Option "DRI2" "boolean"

enable or disable DRI2. DRI2 is disabled by default.

Option "GlxVisuals" "string"

This option controls how many GLX visuals the GLX modules sets

up. The default value is typical, which will setup up a typical subset of the GLXFBConfigs provided by the driver as GLX visu? als. Other options are minimal, which will set up the minimal set allowed by the GLX specification and all which will setup GLX visuals for all GLXFBConfigs.

Option "UseDefaultFontPath" "boolean"

Include the default font path even if other paths are specified in xorg.conf. If enabled, other font paths are included as well. Enabled by default.

Option "IgnoreABI" "boolean"

Allow modules built for a different, potentially incompatible version of the X server to load. Disabled by default.

Option "AutoAddDevices" "boolean"

If this option is disabled, then no devices will be added from the HAL or udev backends. Enabled by default.

Option "AutoEnableDevices" "boolean"

If this option is disabled, then the devices will be added (and the DevicePresenceNotify event sent), but not enabled, thus leaving policy up to the client. Enabled by default.

Option "AutoAddGPU" "boolean"

If this option is disabled, then no GPU devices will be added from the udev backend. Enabled by default. (May need to be dis? abled to setup Xinerama).

Option "AutoBindGPU" "boolean"

If enabled then secondary GPUs will be automatically set up as output-sinks and offload-sources. Making e.g. laptop outputs connected only to the secondary GPU directly available for use without needing to run "xrandr --setprovideroutputsource". En? abled by default.

Option "Log" "string"

This option controls whether the log is flushed and/or synced to disk after each message. Possible values are flush or sync. Unset by default.

MODULE SECTION

The Module section is used to specify which Xorg server modules should be loaded. This section is ignored when the Xorg server is built in static form. The type of modules normally loaded in this section are Xorg server extension modules. Most other module types are loaded au? tomatically when they are needed via other mechanisms. The Module sec? tion is optional, as are all of the entries that may be specified in it.

Entries in this section may be in two forms. The first and most com? monly used form is an entry that uses the Load keyword, as described here:

Load "modulename"

This instructs the server to load the module called modulename. The module name given should be the module's standard name, not the module file name. The standard name is case-sensitive, and does not include the ?lib? or ?cyg? prefixes, or the ?.so? or ?.dll? suffixes.

Example: the DRI extension module can be loaded with the follow? ing entry:

Load "dri"

Disable "modulename"

This instructs the server to not load the module called module? name. Some modules are loaded by default in the server, and this overrides that default. If a Load instruction is given for the same module, it overrides the Disable instruction and the module is loaded. The module name given should be the module's standard name, not the module file name. As with the Load in? struction, the standard name is case-sensitive, and does not in? clude the "lib" prefix, or the ".a", ".o", or ".so" suffixes.

The second form of entry is a SubSection, with the subsection name be? ing the module name, and the contents of the SubSection being Options that are passed to the module when it is loaded.

Example: the extmod module (which contains a miscellaneous group of

server extensions) can be loaded, with the XFree86-DGA extension dis? abled by using the following entry:

```
SubSection "extmod"
  Option "omit XFree86-DGA"
EndSubSection
```

Modules are searched for in each directory specified in the ModulePath search path, and in the drivers, extensions, input, internal, and mul? timedia subdirectories of each of those directories. In addition to this, operating system specific subdirectories of all the above are searched first if they exist.

To see what extension modules are available, check the extensions sub? directory under:

```
/usr/lib64/xorg/modules
```

The ?extmod?, ?dbe?, ?dri?, ?dri2?, ?glx?, and ?record? extension mod? ules are loaded automatically, if they are present, unless disabled with "Disable" entries. It is recommended that at very least the ?extmod? extension module be loaded. If it isn't, some commonly used server extensions (like the SHAPE extension) will not be available.

EXTENSIONS SECTION

The Extensions section is used to specify which X11 protocol extensions should be enabled or disabled. The Extensions section is optional, as are all of the entries that may be specified in it.

Entries in this section are listed as Option statements with the name of the extension as the first argument, and a boolean value as the sec? ond. The extension name is case-sensitive, and matches the form shown in the output of "Xorg -extension ?".

Example: the MIT-SHM extension can be disabled with the follow? ing entry:

```
Section "Extensions"
  Option "MIT-SHM" "Disable"
EndSection
```

INPUTDEVICE SECTION

The config file may have multiple InputDevice sections. Recent X

servers employ HAL or udev backends for input device enumeration and input hotplugging. It is usually not necessary to provide InputDevice sections in the xorg.conf if hotplugging is in use (i.e. AutoAddDevices is enabled). If hotplugging is enabled, InputDevice sections using the mouse, kbd and vmmouse driver will be ignored.

If hotplugging is disabled, there will normally be at least two: one for the core (primary) keyboard and one for the core pointer. If ei? ther of these two is missing, a default configuration for the missing ones will be used. In the absence of an explicitly specified core input device, the first InputDevice marked as CorePointer (or CoreKeyboard) is used. If there is no match there, the first InputDevice that uses the ?mouse? (or ?kbd?) driver is used. The final fallback is to use built-in default configurations. Currently the default configuration may not work as expected on all platforms.

InputDevice sections have the following format:

```
Section "InputDevice"
    Identifier "name"
    Driver     "inputdriver"
    options
    ...
EndSection
```

The Identifier and Driver entries are required in all InputDevice sec? tions. All other entries are optional.

The Identifier entry specifies the unique name for this input device.

The Driver entry specifies the name of the driver to use for this input device. When using the loadable server, the input driver module "in? putdriver" will be loaded for each active InputDevice section. An In? putDevice section is considered active if it is referenced by an active ServerLayout section, if it is referenced by the -keyboard or -pointer command line options, or if it is selected implicitly as the core pointer or keyboard device in the absence of such explicit references.

The most commonly used input drivers are evdev(4) on Linux systems, and kbd(4) and mousedrv(4) on other platforms.

InputDevice sections recognise some driver-independent Options, which are described here. See the individual input driver manual pages for a description of the device-specific options.

Option "AutoServerLayout" "boolean"

Always add the device to the ServerLayout section used by this instance of the server. This affects implied layouts as well as explicit layouts specified in the configuration and/or on the command line.

Option "CorePointer"

Deprecated, see Floating

Option "CoreKeyboard"

Deprecated, see Floating

Option "AlwaysCore" "boolean"

Deprecated, see Floating

Option "SendCoreEvents" "boolean"

Deprecated, see Floating

Option "Floating" "boolean"

When enabled, the input device is set up floating and does not report events through any master device or control a cursor. The device is only available to clients using the X Input Extension API. This option is disabled by default. The options Core? Pointer, CoreKeyboard, AlwaysCore, and SendCoreEvents, are the inverse of option Floating (i.e. SendCoreEvents "on" is equiva? lent to Floating "off").

This option controls the startup behavior only, a device may be reattached or set floating at runtime.

Option "TransformationMatrix" "a b c d e f g h i"

Specifies the 3x3 transformation matrix for absolute input de? vices. The input device will be bound to the area given in the matrix. In most configurations, "a" and "e" specify the width and height of the area the device is bound to, and "c" and "f" specify the x and y offset of the area. The value range is 0 to 1, where 1 represents the width or height of all root windows

together, 0.5 represents half the area, etc. The values repre? sent a 3x3 matrix, with the first, second and third group of three values representing the first, second and third row of the matrix, respectively. The identity matrix is "1 0 0 0 1 0 0 0 1".

POINTER ACCELERATION

For pointing devices, the following options control how the pointer is accelerated or decelerated with respect to physical device motion. Most of these can be adjusted at runtime, see the xinput(1) man page for de? tails. Only the most important acceleration options are discussed here.

Option "AccelerationProfile" "integer"

Select the profile. In layman's terms, the profile constitutes the "feeling" of the acceleration. More formally, it defines how the transfer function (actual acceleration as a function of cur? rent device velocity and acceleration controls) is constructed. This is mainly a matter of personal preference.

0 classic (mostly compatible)

-1 none (only constant deceleration is applied)

1 device-dependent

2 polynomial (polynomial function)

3 smooth linear (soft knee, then linear)

4 simple (normal when slow, otherwise accelerated)

5 power (power function)

6 linear (more speed, more acceleration)

7 limited (like linear, but maxes out at threshold)

Option "ConstantDeceleration" "real"

Makes the pointer go deceleration times slower than normal. Most useful for high-resolution devices. A value between 0 and 1 will speed up the pointer.

Option "AdaptiveDeceleration" "real"

Allows to actually decelerate the pointer when going slow. At most, it will be adaptive deceleration times slower. Enables precise pointer placement without sacrificing speed.

Option "AccelerationScheme" "string"

Selects the scheme, which is the underlying algorithm.

predictable default algorithm (behaving more predictable)

lightweight old acceleration code (as specified in the X protocol spec)

none no acceleration or deceleration

Option "AccelerationNumerator" "integer"

Option "AccelerationDenominator" "integer"

Set numerator and denominator of the acceleration factor. The acceleration factor is a rational which, together with thresh? old, can be used to tweak profiles to suit the users needs. The simple and limited profiles use it directly (i.e. they acceler? ate by the factor), for other profiles it should hold that a higher acceleration factor leads to a faster pointer. Typically, 1 is unaccelerated and values up to 5 are sensible.

Option "AccelerationThreshold" "integer"

Set the threshold, which is roughly the velocity (usually device units per 10 ms) required for acceleration to become effective. The precise effect varies with the profile however.

INPUTCLASS SECTION

The config file may have multiple InputClass sections. These sections are optional and are used to provide configuration for a class of input devices as they are automatically added. An input device can match more than one InputClass section. Each class can override settings from a previous class, so it is best to arrange the sections with the most generic matches first.

InputClass sections have the following format:

```
Section "InputClass"
    Identifier "name"
    entries
    ...
    options
    ...
EndSection
```

The Identifier entry is required in all InputClass sections. All other entries are optional.

The Identifier entry specifies the unique name for this input class.

The Driver entry specifies the name of the driver to use for this input device. After all classes have been examined, the "inputdriver" module from the first Driver entry will be enabled when using the loadable server.

When an input device is automatically added, its characteristics are checked against all InputClass sections. Each section can contain op? tional entries to narrow the match of the class. If none of the op? tional entries appear, the InputClass section is generic and will match any input device. If more than one of these entries appear, they all must match for the configuration to apply.

There are two types of match entries used in InputClass sections. The first allows various tokens to be matched against attributes of the de? vice. An entry can be constructed to match attributes from different devices by separating arguments with a '|' character. Multiple entries of the same type may be supplied to add multiple matching conditions on the same attribute. For example:

```
Section "InputClass"
    Identifier   "My Class"
    # product string must contain example and
    # either gizmo or gadget
    MatchProduct "example"
    MatchProduct "gizmo|gadget"
    NoMatchDriver "drivername"
    ...
EndSection
```

MatchProduct "matchproduct"

This entry can be used to check if the substring "matchproduct" occurs in the device's product name.

MatchVendor "matchvendor"

This entry can be used to check if the substring "matchvendor"

occurs in the device's vendor name.

MatchDevicePath "matchdevice"

This entry can be used to check if the device file matches the "matchdevice" pathname pattern.

MatchOS "matchos"

This entry can be used to check if the operating system matches the case-insensitive "matchos" string. This entry is only sup? ported on platforms providing the uname(2) system call.

MatchPnPID "matchpnp"

The device's Plug and Play (PnP) ID can be checked against the "matchpnp" shell wildcard pattern.

MatchUSBID "matchusb"

The device's USB ID can be checked against the "matchusb" shell wildcard pattern. The ID is constructed as lowercase hexadecimal numbers separated by a ':'. This is the same format as the lsusb(8) program.

MatchDriver "matchdriver"

Check the case-sensitive string "matchdriver" against the cur? rently configured driver of the device. Ordering of sections us? ing this entry is important since it will not match unless the driver has been set by the config backend or a previous Input? Class section.

MatchTag "matchtag"

This entry can be used to check if tags assigned by the config backend matches the "matchtag" pattern. A match is found if at least one of the tags given in "matchtag" matches at least one of the tags assigned by the backend.

MatchLayout "matchlayout"

Check the case-sensitive string "matchlayout" against the cur? rently active ServerLayout section. The empty string "" matches an implicit layout which appears if no named ServerLayout sec? tions have been found.

The above directives have equivalents for negative matching with the

NoMatchProduct, NoMatchVendor, NoMatchDevicePath, NoMatchOS, NoMatchPn?
PID, NoMatchUSBID, NoMatchDriver, NoMatchTag, and NoMatchLayout direc?
tives. These NoMatch directives match if the subsequent match is not
met by the device.

The second type of entry is used to match device types. These entries
take a boolean argument similar to Option entries.

MatchIsKeyboard "bool"

MatchIsPointer "bool"

MatchIsJoystick "bool"

MatchIsTablet "bool"

MatchIsTabletPad "bool"

MatchIsTouchpad "bool"

MatchIsTouchscreen "bool"

When an input device has been matched to the InputClass section, any
Option entries are applied to the device. One InputClass specific Op?
tion is recognized. See the InputDevice section above for a description
of the remaining Option entries.

Option "Ignore" "boolean"

This optional entry specifies that the device should be ignored
entirely, and not added to the server. This can be useful when
the device is handled by another program and no X events should
be generated.

OUTPUTCLASS SECTION

The config file may have multiple OutputClass sections. These sections
are optional and are used to provide configuration for a class of out?
put devices as they are automatically added. An output device can
match more than one OutputClass section. Each class can override set?
tings from a previous class, so it is best to arrange the sections with
the most generic matches first.

OutputClass sections have the following format:

```
Section "OutputClass"
    Identifier "name"
    entries
```

...

EndSection

The Identifier entry is required in all OutputClass sections. All other entries are optional.

The Identifier entry specifies the unique name for this output class.

The Driver entry specifies the name of the driver to use for this out? put device. After all classes have been examined, the "outputdriver" module from the first Driver entry will be enabled when using the load? able server.

When an output device is automatically added, its characteristics are checked against all OutputClass sections. Each section can contain op? tional entries to narrow the match of the class. If none of the op? tional entries appear, the OutputClass section is generic and will match any output device. If more than one of these entries appear, they all must match for the configuration to apply.

The following list of tokens can be matched against attributes of the device. An entry can be constructed to match attributes from different devices by separating arguments with a '|' character.

For example:

```
Section "OutputClass"
    Identifier   "My Class"
    # kernel driver must be either foo or bar
    MatchDriver "foo|bar"
    ...
EndSection
```

MatchDriver "matchdriver"

Check the case-sensitive string "matchdriver" against the kernel driver of the device.

When an output device has been matched to the OutputClass section, any Option entries are applied to the device. One OutputClass specific Op? tion is recognized. See the Device section below for a description of the remaining Option entries.

Option "PrimaryGPU" "boolean"

This option specifies that the matched device should be treated as the primary GPU, replacing the selection of the GPU used as output by the firmware. If multiple output devices match an Out? putClass section with the PrimaryGPU option set, the first one enumerated becomes the primary GPU.

A OutputClass Section may contain ModulePath entries. When an output device matches an OutputClass section, any ModulePath entries in that OutputClass are pre-pended to the search path for loadable Xorg server modules. See ModulePath in the Files section for more info.

DEVICE SECTION

The config file may have multiple Device sections. There must be at least one, for the video card being used.

Device sections have the following format:

```
Section "Device"
    Identifier "name"
    Driver     "driver"
    entries
    ...
EndSection
```

The Identifier and Driver entries are required in all Device sections. All other entries are optional.

The Identifier entry specifies the unique name for this graphics de? vice. The Driver entry specifies the name of the driver to use for this graphics device. When using the loadable server, the driver mod? ule "driver" will be loaded for each active Device section. A Device section is considered active if it is referenced by an active Screen section.

Device sections recognise some driver-independent entries and Options, which are described here. Not all drivers make use of these driver-in? dependent entries, and many of those that do don't require them to be specified because the information is auto-detected. See the individual graphics driver manual pages for further information about this, and for a description of the device-specific options. Note that most of

the Options listed here (but not the other entries) may be specified in the Screen section instead of here in the Device section.

BusID "bus-id"

This specifies the bus location of the graphics card. For PCI/AGP cards, the bus-id string has the form PCI:bus@domain:de?vice:function (e.g., ?PCI:1@0:0:0? might be appropriate for an AGP card). The "@domain" part can be left out for PCI domain 0. This field is usually optional in single-head configurations when using the primary graphics card. In multi-head configura?tions, or when using a secondary graphics card in a single-head configuration, this entry is mandatory. Its main purpose is to make an unambiguous connection between the device section and the hardware it is representing. This information can usually be found by running the pciaccess tool scanpci.

Screen number

This option is mandatory for cards where a single PCI entity can drive more than one display (i.e., multiple CRTCs sharing a sin?gle graphics accelerator and video memory). One Device section is required for each head, and this parameter determines which head each of the Device sections applies to. The legal values of number range from 0 to one less than the total number of heads per entity. Most drivers require that the primary screen (0) be present.

Chipset "chipset"

This usually optional entry specifies the chipset used on the graphics board. In most cases this entry is not required be?cause the drivers will probe the hardware to determine the chipset type. Don't specify it unless the driver-specific docu?mentation recommends that you do.

Ramdac "ramdac-type"

This optional entry specifies the type of RAMDAC used on the graphics board. This is only used by a few of the drivers, and in most cases it is not required because the drivers will probe

the hardware to determine the RAMDAC type where possible. Don't specify it unless the driver-specific documentation recommends that you do.

DacSpeed speed

DacSpeed speed-8 speed-16 speed-24 speed-32

This optional entry specifies the RAMDAC speed rating (which is usually printed on the RAMDAC chip). The speed is in MHz. When one value is given, it applies to all framebuffer pixel sizes. When multiple values are given, they apply to the framebuffer pixel sizes 8, 16, 24 and 32 respectively. This is not used by many drivers, and only needs to be specified when the speed rat? ing of the RAMDAC is different from the defaults built in to driver, or when the driver can't auto-detect the correct de? faults. Don't specify it unless the driver-specific documenta? tion recommends that you do.

Clocks clock ...

specifies the pixel that are on your graphics board. The clocks are in MHz, and may be specified as a floating point number. The value is stored internally to the nearest kHz. The ordering of the clocks is important. It must match the order in which they are selected on the graphics board. Multiple Clocks lines may be specified, and each is concatenated to form the list. Most drivers do not use this entry, and it is only required for some older boards with non-programmable clocks. Don't specify this entry unless the driver-specific documentation explicitly recommends that you do.

ClockChip "clockchip-type"

This optional entry is used to specify the clock chip type on graphics boards which have a programmable clock generator. Only a few Xorg drivers support programmable clock chips. For de? tails, see the appropriate driver manual page.

VideoRam mem

This optional entry specifies the amount of video ram that is

installed on the graphics board. This is measured in kBytes. In most cases this is not required because the Xorg server probes the graphics board to determine this quantity. The driver-specific documentation should indicate when it might be needed.

MemBase baseaddress

This optional entry specifies the memory base address of a graphics board's linear frame buffer. This entry is not used by many drivers, and it should only be specified if the driver-spe? cific documentation recommends it.

IOBase baseaddress

This optional entry specifies the IO base address. This entry is not used by many drivers, and it should only be specified if the driver-specific documentation recommends it.

ChipID id

This optional entry specifies a numerical ID representing the chip type. For PCI cards, it is usually the device ID. This can be used to override the auto-detection, but that should only be done when the driver-specific documentation recommends it.

ChipRev rev

This optional entry specifies the chip revision number. This can be used to override the auto-detection, but that should only be done when the driver-specific documentation recommends it.

MatchSeat seat-id

Only apply this Device section if X server was started with -seat seat-id option.

Option "ModeDebug" "boolean"

Enable printing of additional debugging information about mode? setting to the server log.

Option "PreferCloneMode" "boolean"

If enabled, bring up monitors of a screen in clone mode instead of horizontal extended layout by default. (Defaults to off; the video driver can change the default value, but this option can

always override it)

Options

Option flags may be specified in the Device sections. These in?

clude driver-specific options and driver-independent options.

The former are described in the driver-specific documentation.

Some of the latter are described below in the section about the

Screen section, and they may also be included here.

VIDEOADAPTOR SECTION

Nobody wants to say how this works. Maybe nobody knows ...

MONITOR SECTION

The config file may have multiple Monitor sections. There should nor?

mally be at least one, for the monitor being used, but a default con?

figuration will be created when one isn't specified.

Monitor sections have the following format:

```
Section "Monitor"
  Identifier "name"
  entries
  ...
EndSection
```

The only mandatory entry in a Monitor section is the Identifier entry.

The Identifier entry specifies the unique name for this monitor. The

Monitor section may be used to provide information about the specifica?

tions of the monitor, monitor-specific Options, and information about

the video modes to use with the monitor.

With RandR 1.2-enabled drivers, monitor sections may be tied to spe?

cific outputs of the video card. Using the name of the output defined

by the video driver plus the identifier of a monitor section, one asso?

ciates a monitor section with an output by adding an option to the De?

vice section in the following format:

Option "Monitor-outputname" "monitorsection"

(for example, Option "Monitor-VGA" "VGA monitor" for a VGA output)

In the absence of specific association of monitor sections to outputs,

if a monitor section is present the server will associate it with an

output to preserve compatibility for previous single-head configura? tions.

Specifying video modes is optional because the server will use the DDC or other information provided by the monitor to automatically configure the list of modes available. When modes are specified explicitly in the Monitor section (with the Mode, ModeLine, or UseModes keywords), built-in modes with the same names are not included. Built-in modes with different names are, however, still implicitly included, when they meet the requirements of the monitor.

The entries that may be used in Monitor sections are described below.

VendorName "vendor"

This optional entry specifies the monitor's manufacturer.

ModelName "model"

This optional entry specifies the monitor's model.

HorizSync horizsync-range

gives the range(s) of horizontal sync frequencies supported by the monitor. horizsync-range may be a comma separated list of either discrete values or ranges of values. A range of values is two values separated by a dash. By default the values are in units of kHz. They may be specified in MHz or Hz if MHz or Hz is added to the end of the line. The data given here is used by the Xorg server to determine if video modes are within the spec? ifications of the monitor. This information should be available in the monitor's handbook. If this entry is omitted, a default range of 28-33kHz is used.

VertRefresh vertrefresh-range

gives the range(s) of vertical refresh frequencies supported by the monitor. vertrefresh-range may be a comma separated list of either discrete values or ranges of values. A range of values is two values separated by a dash. By default the values are in units of Hz. They may be specified in MHz or kHz if MHz or kHz is added to the end of the line. The data given here is used by the Xorg server to determine if video modes are within the spec?

ifications of the monitor. This information should be available in the monitor's handbook. If this entry is omitted, a default range of 43-72Hz is used.

DisplaySize width height

This optional entry gives the width and height, in millimetres, of the picture area of the monitor. If given this is used to calculate the horizontal and vertical pitch (DPI) of the screen.

Gamma gamma-value

Gamma red-gamma green-gamma blue-gamma

This is an optional entry that can be used to specify the gamma correction for the monitor. It may be specified as either a single value or as three separate RGB values. The values should be in the range 0.1 to 10.0, and the default is 1.0. Not all drivers are capable of using this information.

UseModes "modesection-id"

Include the set of modes listed in the Modes section called mod? esection-id. This makes all of the modes defined in that sec? tion available for use by this monitor.

Mode "name"

This is an optional multi-line entry that can be used to provide definitions for video modes for the monitor. In most cases this isn't necessary because the built-in set of VESA standard modes will be sufficient. The Mode keyword indicates the start of a multi-line video mode description. The mode description is ter? minated with the EndMode keyword. The mode description consists of the following entries:

DotClock clock

is the dot (pixel) clock rate to be used for the mode.

HTimings hdisp hsyncstart hsyncend htotal

specifies the horizontal timings for the mode.

VTimings vdisp vsyncstart vsyncend vtotal

specifies the vertical timings for the mode.

Flags "flag" ...

specifies an optional set of mode flags, each of which is a separate string in double quotes. "Interlace" indicates that the mode is interlaced. "DoubleScan" indicates a mode where each scanline is doubled. "+HSync" and "-HSync" can be used to select the polarity of the HSync signal. "+VSync" and "-VSync" can be used to select the polarity of the VSync signal. "Composite" can be used to specify com? posite sync on hardware where this is supported. Addition? ally, on some hardware, "+CSync" and "-CSync" may be used to select the composite sync polarity.

HSkew hskew

specifies the number of pixels (towards the right edge of the screen) by which the display enable signal is to be skewed. Not all drivers use this information. This option might become necessary to override the default value sup? plied by the server (if any). ?Roving? horizontal lines in? dicate this value needs to be increased. If the last few pixels on a scan line appear on the left of the screen, this value should be decreased.

VScan vscan

specifies the number of times each scanline is painted on the screen. Not all drivers use this information. Values less than 1 are treated as 1, which is the default. Gener? ally, the "DoubleScan" Flag mentioned above doubles this value.

ModeLine "name" mode-description

This entry is a more compact version of the Mode entry, and it also can be used to specify video modes for the monitor. This is a single line format for specifying video modes. In most cases this isn't necessary because the built-in set of VESA standard modes will be sufficient.

The mode-description is in four sections, the first three of which are mandatory. The first is the dot (pixel) clock. This

is a single number specifying the pixel clock rate for the mode in MHz. The second section is a list of four numbers specifying the horizontal timings. These numbers are the hdisp, hsync? start, hsyncend, and htotal values. The third section is a list of four numbers specifying the vertical timings. These numbers are the vdisp, vsyncstart, vsyncend, and vtotal values. The fi? nal section is a list of flags specifying other characteristics of the mode. Interlace indicates that the mode is interlaced. DoubleScan indicates a mode where each scanline is doubled. +HSync and -HSync can be used to select the polarity of the HSync signal. +VSync and -VSync can be used to select the po? larity of the VSync signal. Composite can be used to specify composite sync on hardware where this is supported. Addition? ally, on some hardware, +CSync and -CSync may be used to select the composite sync polarity. The HSkew and VScan options men? tioned above in the Mode entry description can also be used here.

Option "DPMS" "bool"

This option controls whether the server should enable the DPMS extension for power management for this screen. The default is to enable the extension.

Option "SyncOnGreen" "bool"

This option controls whether the video card should drive the sync signal on the green color pin. Not all cards support this option, and most monitors do not require it. The default is off.

Option "Primary" "bool"

This optional entry specifies that the monitor should be treated as the primary monitor. (RandR 1.2-supporting drivers only)

Option "PreferredMode" "name"

This optional entry specifies a mode to be marked as the pre? ferred initial mode of the monitor. (RandR 1.2-supporting driv? ers only)

Option "ZoomModes" "name name ..."

This optional entry specifies modes to be marked as zoom modes. It is possible to switch to the next and previous mode via Ctrl+Alt+Keypad-Plus and Ctrl+Alt+Keypad-Minus. All these key? pad available modes are selected from the screen mode list. This list is a copy of the compatibility output monitor mode list. Since this output is the output connected to the lowest dot-area monitor, as determined from its largest size mode, that monitor defines the available zoom modes. (RandR 1.2-supporting drivers only)

Option "Position" "x y"

This optional entry specifies the position of the monitor within the X screen. (RandR 1.2-supporting drivers only)

Option "LeftOf" "output"

This optional entry specifies that the monitor should be posi? tioned to the left of the output (not monitor) of the given name. (RandR 1.2-supporting drivers only)

Option "RightOf" "output"

This optional entry specifies that the monitor should be posi? tioned to the right of the output (not monitor) of the given name. (RandR 1.2-supporting drivers only)

Option "Above" "output"

This optional entry specifies that the monitor should be posi? tioned above the output (not monitor) of the given name. (RandR 1.2-supporting drivers only)

Option "Below" "output"

This optional entry specifies that the monitor should be posi? tioned below the output (not monitor) of the given name. (RandR 1.2-supporting drivers only)

Option "Enable" "bool"

This optional entry specifies whether the monitor should be turned on at startup. By default, the server will attempt to enable all connected monitors. (RandR 1.2-supporting drivers

only)

Option "DefaultModes" "bool"

This optional entry specifies whether the server should add sup? ported default modes to the list of modes offered on this moni? tor. By default, the server will add default modes; you should only disable this if you can guarantee that EDID will be avail? able at all times, or if you have added custom modelines which the server can use. (RandR 1.2-supporting drivers only)

Option "MinClock" "frequency"

This optional entry specifies the minimum dot clock, in kHz, that is supported by the monitor.

Option "MaxClock" "frequency"

This optional entry specifies the maximum dot clock, in kHz, that is supported by the monitor.

Option "Ignore" "bool"

This optional entry specifies that the monitor should be ignored entirely, and not reported through RandR. This is useful if the hardware reports the presence of outputs that don't exist. (RandR 1.2-supporting drivers only)

Option "Rotate" "rotation"

This optional entry specifies the initial rotation of the given monitor. Valid values for rotation are "normal", "left", "right", and "inverted". (RandR 1.2-supporting drivers only)

MODES SECTION

The config file may have multiple Modes sections, or none. These sec? tions provide a way of defining sets of video modes independently of the Monitor sections. Monitor sections may include the definitions provided in these sections by using the UseModes keyword. In most cases the Modes sections are not necessary because the built-in set of VESA standard modes will be sufficient.

Modes sections have the following format:

```
Section "Modes"
  Identifier "name"
```

entries

...

EndSection

The Identifier entry specifies the unique name for this set of mode de? scriptions. The other entries permitted in Modes sections are the Mode and ModeLine entries that are described above in the Monitor section.

SCREEN SECTION

The config file may have multiple Screen sections. There must be at least one, for the ?screen? being used. A ?screen? represents the binding of a graphics device (Device section) and a monitor (Monitor section). A Screen section is considered ?active? if it is referenced by an active ServerLayout section or by the -screen command line op? tion. If neither of those is present, the first Screen section found in the config file is considered the active one.

Screen sections have the following format:

```
Section "Screen"
    Identifier "name"
    Device     "devid"
    GPUDevice  "devid"
    Monitor    "monid"
    entries
    ...
    SubSection "Display"
      entries
      ...
    EndSubSection
    ...
EndSection
```

The Identifier entry is mandatory. All others are optional.

The Identifier entry specifies the unique name for this screen. The Screen section provides information specific to the whole screen, in? cluding screen-specific Options. In multi-head configurations, there will be multiple active Screen sections, one for each head. The en?

tries available for this section are:

Device "device-id"

This entry specifies the Device section to be used for this screen. When multiple graphics cards are present, this is what ties a specific card to a screen. The device-id must match the Identifier of a Device section in the config file.

GPUDevice "device-id"

This entry specifies the Device section to be used as a sec? ondary GPU device for this screen. When multiple graphics cards are present, this is what ties a specific secondary card to a screen. The device-id must match the Identifier of a Device section in the config file. This can be specified up to 4 times for a single screen.

Monitor "monitor-id"

specifies which monitor description is to be used for this screen. If a Monitor name is not specified, a default configu? ration is used. Currently the default configuration may not function as expected on all platforms.

VideoAdaptor "xv-id"

specifies an optional Xv video adaptor description to be used with this screen.

DefaultDepth depth

specifies which color depth the server should use by default. The -depth command line option can be used to override this. If neither is specified, the default depth is driver-specific, but in most cases is 8.

DefaultFbBpp bpp

specifies which framebuffer layout to use by default. The -fbbpp command line option can be used to override this. In most cases the driver will chose the best default value for this. The only case where there is even a choice in this value is for depth 24, where some hardware supports both a packed 24 bit framebuffer layout and a sparse 32 bit framebuffer layout.

MatchSeat seat-id

Only apply this Screen section if X server was started with -seat seat-id option.

Options

Various Option flags may be specified in the Screen section. Some are driver-specific and are described in the driver documentation. Others are driver-independent, and will eventually be described here.

Option "Accel"

Enables 2D hardware acceleration. This option is on by default, but it may be necessary to turn it off if there are bugs in the driver. There are many options to disable specific accelerated operations, listed below. Note that disabling an operation will have no effect if the operation is not accelerated (whether due to lack of support in the hardware or in the driver).

Option "GlxVendorLibrary" "string"

This option specifies a space-separated list of OpenGL vendor libraries to use for the screen. This may be used to select an alternate implementation for development, debugging, or alternate feature sets. Default: mesa.

Option "InitPrimary" "boolean"

Use the Int10 module to initialize the primary graphics card. Normally, only secondary cards are soft-booted using the Int10 module, as the primary card has already been initialized by the BIOS at boot time. Default: false.

Option "NoInt10" "boolean"

Disables the Int10 module, a module that uses the int10 call to the BIOS of the graphics card to initialize it. Default: false.

Each Screen section may optionally contain one or more Display subsections. Those subsections provide depth/fbbpp specific configuration information, and the one chosen depends on the depth and/or fbbpp that is being used for the screen. The Display subsection format is described in the section below.

DISPLAY SUBSECTION

Each Screen section may have multiple Display subsections. The ?active? Display subsection is the first that matches the depth and/or fbbpp values being used, or failing that, the first that has neither a depth or fbbpp value specified. The Display subsections are optional. When there isn't one that matches the depth and/or fbbpp values being used, all the parameters that can be specified here fall back to their defaults.

Display subsections have the following format:

```
SubSection "Display"
  Depth  depth
  entries
  ...
EndSubSection
```

Depth depth

This entry specifies what colour depth the Display subsection is to be used for. This entry is usually specified, but it may be omitted to create a match-all Display subsection or when wishing to match only against the FbBpp parameter. The range of depth values that are allowed depends on the driver. Most drivers support 8, 15, 16 and 24. Some also support 1 and/or 4, and some may support other values (like 30). Note: depth means the number of bits in a pixel that are actually used to determine the pixel colour. 32 is not a valid depth value. Most hardware that uses 32 bits per pixel only uses 24 of them to hold the colour information, which means that the colour depth is 24, not 32.

FbBpp bpp

This entry specifies the framebuffer format this Display subsection is to be used for. This entry is only needed when providing depth 24 configurations that allow a choice between a 24 bpp packed framebuffer format and a 32bpp sparse framebuffer format. In most cases this entry should not be used.

Weight red-weight green-weight blue-weight

This optional entry specifies the relative RGB weighting to be used for a screen is being used at depth 16 for drivers that al? low multiple formats. This may also be specified from the com? mand line with the -weight option (see Xorg(1)).

Virtual xdim ydim

This optional entry specifies the virtual screen resolution to be used. xdim must be a multiple of either 8 or 16 for most drivers, and a multiple of 32 when running in monochrome mode. The given value will be rounded down if this is not the case. Video modes which are too large for the specified virtual size will be rejected. If this entry is not present, the virtual screen resolution will be set to accommodate all the valid video modes given in the Modes entry. Some drivers/hardware combina? tions do not support virtual screens. Refer to the appropriate driver-specific documentation for details.

ViewPort x0 y0

This optional entry sets the upper left corner of the initial display. This is only relevant when the virtual screen resolu? tion is different from the resolution of the initial video mode. If this entry is not given, then the initial display will be centered in the virtual display area.

Modes "mode-name" ...

This optional entry specifies the list of video modes to use. Each mode-name specified must be in double quotes. They must correspond to those specified or referenced in the appropriate Monitor section (including implicitly referenced built-in VESA standard modes). The server will delete modes from this list which don't satisfy various requirements. The first valid mode in this list will be the default display mode for startup. The list of valid modes is converted internally into a circular list. It is possible to switch to the next mode with Ctrl+Alt+Keypad-Plus and to the previous mode with Ctrl+Alt+Key?

pad-Minus. When this entry is omitted, the valid modes refer? enced by the appropriate Monitor section will be used. If the Monitor section contains no modes, then the selection will be taken from the built-in VESA standard modes.

Visual "visual-name"

This optional entry sets the default root visual type. This may also be specified from the command line (see the Xserver(1) man page). The visual types available for depth 8 are (default is PseudoColor):

StaticGray

GrayScale

StaticColor

PseudoColor

TrueColor

DirectColor

The visual type available for the depths 15, 16 and 24 are (de? fault is TrueColor):

TrueColor

DirectColor

Not all drivers support DirectColor at these depths.

The visual types available for the depth 4 are (default is Stat? icColor):

StaticGray

GrayScale

StaticColor

PseudoColor

The visual type available for the depth 1 (monochrome) is Stat? icGray.

Black red green blue

This optional entry allows the ?black? colour to be specified. This is only supported at depth 1. The default is black.

White red green blue

This optional entry allows the ?white? colour to be specified.

This is only supported at depth 1. The default is white.

Options

Option flags may be specified in the Display subsections. These may include driver-specific options and driver-independent op? tions. The former are described in the driver-specific documen? tation. Some of the latter are described above in the section about the Screen section, and they may also be included here.

SERVERLAYOUT SECTION

The config file may have multiple ServerLayout sections. A ?server layout? represents the binding of one or more screens (Screen sections) and one or more input devices (InputDevice sections) to form a complete configuration. In multi-head configurations, it also specifies the relative layout of the heads. A ServerLayout section is considered ?active? if it is referenced by the -layout command line option or by an Option "DefaultServerLayout" entry in the ServerFlags section (the former takes precedence over the latter). If those options are not used, the first ServerLayout section found in the config file is con? sidered the active one. If no ServerLayout sections are present, the single active screen and two active (core) input devices are selected as described in the relevant sections above.

ServerLayout sections have the following format:

```
Section "ServerLayout"
    Identifier   "name"
    Screen       "screen-id"
    ...
    InputDevice  "idev-id"
    ...
    options
    ...
EndSection
```

Each ServerLayout section must have an Identifier entry and at least one Screen entry.

The Identifier entry specifies the unique name for this server layout.

The ServerLayout section provides information specific to the whole session, including session-specific Options. The ServerFlags options (described above) may be specified here, and ones given here override those given in the ServerFlags section.

The entries that may be used in this section are described here.

Screen screen-num "screen-id" position-information

One of these entries must be given for each screen being used in a session. The screen-id field is mandatory, and specifies the Screen section being referenced. The screen-num field is optional, and may be used to specify the screen number in multi-head configurations. When this field is omitted, the screens will be numbered in the order that they are listed in. The numbering starts from 0, and must be consecutive. The position-information field describes the way multiple screens are positioned. There are a number of different ways that this information can be provided:

x y

Absolute x y

These both specify that the upper left corner's coordinates are (x,y). The Absolute keyword is optional. Some older versions of XFree86 (4.2 and earlier) don't recognise the Absolute keyword, so it's safest to just specify the coordinates without it.

RightOf "screen-id"

LeftOf "screen-id"

Above "screen-id"

Below "screen-id"

Relative "screen-id" x y

These give the screen's location relative to another screen. The first four position the screen immediately to the right, left, above or below the other screen. When positioning to the right or left, the top edges are aligned. When positioning above or below, the left edges are aligned. The

Relative form specifies the offset of the screen's origin (upper left corner) relative to the origin of another screen.

InputDevice "idev-id" "option" ...

One of these entries should be given for each input device being used in a session. Normally at least two are required, one each for the core pointer and keyboard devices. If either of those is missing, suitable InputDevice entries are searched for using the method described above in the INPUTDEVICE section. The idev-id field is mandatory, and specifies the name of the Input? Device section being referenced. Multiple option fields may be specified, each in double quotes. The options permitted here are any that may also be given in the InputDevice sections. Normally only session-specific input device options would be used here. The most commonly used options are:

"CorePointer"

"CoreKeyboard"

"SendCoreEvents"

and the first two should normally be used to indicate the core pointer and core keyboard devices respectively.

MatchSeat seat-id

Only apply this ServerLayout section if X server was started with -seat seat-id option.

Options

In addition to the following, any option permitted in the ServerFlags section may also be specified here. When the same option appears in both places, the value given here overrides the one given in the ServerFlags section.

Option "IsolateDevice" "bus-id"

Restrict device resets to the specified bus-id. See the BusID option (described in DEVICE SECTION, above) for the format of the bus-id parameter. This option overrides SingleCard, if specified. At present, only PCI devices can be isolated in this

manner.

Option "SingleCard" "boolean"

As IsolateDevice, except that the bus ID of the first device in the layout is used.

Here is an example of a ServerLayout section for a dual headed configu? ration with two mice:

```
Section "ServerLayout"
    Identifier  "Layout 1"
    Screen      "MGA 1"
    Screen      "MGA 2" RightOf "MGA 1"
    InputDevice "Keyboard 1" "CoreKeyboard"
    InputDevice "Mouse 1"    "CorePointer"
    InputDevice "Mouse 2"    "SendCoreEvents"
    Option      "BlankTime"  "5"
EndSection
```

DRI SECTION

This optional section is used to provide some information for the Di? rect Rendering Infrastructure. Details about the format of this sec? tion can be found on-line at <https://dri.freedesktop.org/>.

VENDOR SECTION

The optional Vendor section may be used to provide vendor-specific con? figuration information. Multiple Vendor sections may be present, and they may contain an Identifier entry and multiple Option flags. The data therein is not used in this release.

SEE ALSO

General: X(7), Xserver(1), Xorg(1), cvt(1), gtf(1).

Not all modules or interfaces are available on all platforms.

Display drivers: apm(4), ati(4), chips(4), cirrus(4), cyrix(4), fb? dev(4), glide(4), glint(4), i128(4), i740(4), imstt(4), intel(4), mga(4), neomagic(4), nv(4), openchrome(4), r128(4), radeon(4), rendi? tion(4), savage(4), s3virge(4), siliconmotion(4), sis(4), sisusb(4), sunbw2(4), suncg14(4), suncg3(4), suncg6(4), sunffb(4), sunleo(4), suntcx(4), tdfx(4), trident(4), tseng(4), vesa(4), vmware(4),

voodoo(4), wsfb(4), xgi(4), xgixp(4).

Input drivers: acecad(4), citron(4), elographics(4), evdev(4), fpit(4), joystick(4), kbd(4), libinput(4), mousedrv(4), mutouch(4), penmount(4), synaptics(4), vmmouse(4), void(4), wacom(4).

Other modules and interfaces: exa(4), fbdevhw(4), v4l(4).

AUTHORS

This manual page was largely rewritten by David Dawes <dawes@xfree86.org>.