Xserver Provider for DTrace

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X Server Version 1.12.2

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!

" # $

%

"&' ()"*+,' - ,(.-/'/ + - *-"&(0" *+,,+1"2 () +12
3-1/ '4 ,' (, -5 6-'/ -1760/-18 90" 1(" 6-5-"'/ "("&'
*+,,+1"-' () 5',7&+1"+9-6-"2)-"1')(, + +,"-706+, 0,
(' +1/ 1(1-1),-18'5'1'% -1 1('.'1" &+66 "&' +0"&(, (,
7(2,-8&" &(6/', 9' 6-+96')(, +12 76+-5 /+5+8' (, ("&
', 6-+9-6-"2 *&'"&', -1 +1 +7"-(1 () 7(1",+7" "(," (, ("&
',*- ' +,- -18),(5 (0" () (, -1 7(11'7"-(1 *-"& "&' ()"
+,' (, "&' 0 ' (, ("&', /'+6-18 -1 "&' ()"+,'%

Table of Contents

- %% E
+# %% E
/ +# + %% C
'$ %%%%%%%%%%%%%%%%%%%%

Introduction

" #
< ! = % % /" >/ >" >
>0 >+ ? /" < ! % % # 7
>8 > ? ™ :@ 5 (4 ™ :@%A %
" # # 4 #
%

" # 4%(:@
B (4 # :%C ;@@D 4::,D%E%
/" 5 (4 4 # :%D%

" $ F 4
4 #
%

Available probes

/ 0 / /" =
arg0 arg1 arg2 %"
%

))

, F						
F	7 F %	*re-quest-Name*	*re-quest-Code*	*re-questLength*	*clien-tId*	*re-quest-Buffer*
F	7 F %	*re-quest-Name*	*re-quest-Code*	*se-quen-ceNum-ber*	*clien-tId*	*re-sult-Code*
'#						
#	7 # %	*clien-tId*	*event-Code*	*event-Buffer*		
7 7						
	7	*clien-tId*	*clientFD*			
	7	*clien-tId*	*clien-tAddr*	*client-Pid*	*client-ZoneId*	
	7	*clien-tId*				
, +						

	7 $ %	*re-sourceId*	*re-source-TypeId*	*re-source-Value*	*re-source-Type-Name*	
	7	*re-sourceId*	*re-source-TypeId*	*re-source-Value*	*re-source-Type-Name*	

Data Available in Probe Arguments

"

copyinstr() < ! = % % /" + >
> G+ HH II ?% "
J K copyin() < ! = % %
/" + > > G+ HH II ?%

))

clientAddr		
clientFD		4 # K #
clientId		0 F 4 #
clientPid	J	getpeeru-cred()
clientZoneId	L J	!M get-peerucred()
eventBuffer	J	4 # N X11/Xproto.h < ! % = % $ $ 4 % ?O $
eventCode	PJ	'# 4 #
resourceId	E;J	4 4-/
resourceType-Id	E;J	,
resourceType-Name		4 "PIXMAP" %
resourceValue	J	4
resultCode		- F
requestBuffer	J	4 F N X11/Xproto.h < ! % = % $ $ 4 % ?O $

requestCode	PJ	, F 4 F '$
requestName		1 4 F '$
requestLength	:QJ	6 4 F
sequenceNum-ber	E;J	1 4 F

Examples

!"))# $ $

" F
$ # > # %

```
#!/usr/sbin/dtrace -s

Xserver*:::request-start
{
    @counts[copyinstr(arg0)] = count();
}
```

" !

```
  QueryPointer                                                    1
  CreatePixmap                                                    2
  FreePixmap                                                      2
  PutImage                                                        2
  ChangeGC                                                       10
  CopyArea                                                       10
  CreateGC                                                       14
  FreeGC                                                         14
  RENDER                                                         28
  SetClipRectangles                                              40
```

" F
# #
= !

```
#!/usr/sbin/dtrace -s

string Xrequest[uintptr_t];

Xserver*:::request-start
/Xrequest[arg0] == ""/
{
```

```
    Xrequest[arg0] = copyinstr(arg0);
}

Xserver*:::request-start
{
    @counts[Xrequest[arg0]] = count();
}
```

!"))% & #' $

" 70
F F %

```
#!/usr/sbin/dtrace -s

Xserver*:::request-start
{
    reqstart = vtimestamp;
}

Xserver*:::request-done
{
    @times[copyinstr(arg0)] = avg(vtimestamp - reqstart);
}
```

" = =!

```
  ChangeGC                                                  889
  MapWindow                                                 907
  SetClipRectangles                                        1319
  PolyPoint                                                1413
  PolySegment                                              1434
  PolyRectangle                                            1828
  FreeCursor                                               1895
  FreeGC                                                   1950
  CreateGC                                                 2244
  FreePixmap                                               2246
  GetInputFocus                                            2249
  TranslateCoords                                          8508
  QueryTree                                                8846
  GetGeometry                                              9948
  CreatePixmap                                            12111
  AllowEvents                                             14090
  GrabServer                                              14791
  MIT-SCREEN-SAVER                                        16747
  ConfigureWindow                                         22917
  SetInputFocus                                           28521
  PutImage                                               240841
```

!"))(

"
% # Xserver$1
Xserver* = # $ K 4 #
$ 4 #
%

```
#!/usr/sbin/dtrace -s

Xserver$1:::client-connect
{
 printf("** Client Connect: id %d\n", arg0);
}

Xserver$1:::client-auth
{
 printf("** Client auth'ed: id %d => %s pid %d\n",
  arg0, copyinstr(arg1), arg2);
}

Xserver$1:::client-disconnect
{
 printf("** Client Disconnect: id %d\n", arg0);
}
```

+ !

```
# ./foo.d 5790
dtrace: script './foo.d' matched 4 probes
CPU     ID                    FUNCTION:NAME
  0  15774 CloseDownClient:client-disconnect ** Client Disconnect: id 65

  2  15774 CloseDownClient:client-disconnect ** Client Disconnect: id 64

  0  15773 EstablishNewConnections:client-connect ** Client Connect: id 64

  0  15772            AuthAudit:client-auth ** Client auth'ed: id 64 => local host

  0  15773 EstablishNewConnections:client-connect ** Client Connect: id 65

  0  15772            AuthAudit:client-auth ** Client auth'ed: id 65 => local host

  0  15774 CloseDownClient:client-disconnect ** Client Disconnect: id 64
```

!"))("

" $ 4
=
4 %

```
#!/usr/sbin/dtrace -qs

string Xrequest[uintptr_t];
string Xrestype[uintptr_t];

Xserver$1:::request-start
/Xrequest[arg0] == ""/
{
 Xrequest[arg0] = copyinstr(arg0);
}

Xserver$1:::resource-alloc
/arg3 != 0 && Xrestype[arg3] == ""/
{
 Xrestype[arg3] = copyinstr(arg3);
}


Xserver$1:::request-start
/Xrequest[arg0] == "X_CreatePixmap"/
{
 printf("-> %s: client %d\n", Xrequest[arg0], arg3);
}

Xserver$1:::request-done
/Xrequest[arg0] == "X_CreatePixmap"/
{
 printf("<- %s: client %d\n", Xrequest[arg0], arg3);
}

Xserver$1:::resource-alloc
/Xrestype[arg3] == "PIXMAP"/
{
 printf("** Pixmap alloc: %08x\n", arg0);
}


Xserver$1:::resource-free
/Xrestype[arg3] == "PIXMAP"/
{
 printf("** Pixmap free:  %08x\n", arg0);
}

Xserver$1:::client-connect
{
 printf("** Client Connect: id %d\n", arg0);
}

Xserver$1:::client-auth
{
 printf("** Client auth'ed: id %d => %s pid %d\n",
  arg0, copyinstr(arg1), arg2);
}
```

```
Xserver$1:::client-disconnect
{
 printf("** Client Disconnect: id %d\n", arg0);
}
```

!

```
** Client Connect: id 17
** Client auth'ed: id 17 => local host pid 20273
-> X_CreatePixmap: client 17
** Pixmap alloc: 02200009
<- X_CreatePixmap: client 17
-> X_CreatePixmap: client 15
** Pixmap alloc: 01e00180
<- X_CreatePixmap: client 15
-> X_CreatePixmap: client 15
** Pixmap alloc: 01e00181
<- X_CreatePixmap: client 15
-> X_CreatePixmap: client 14
** Pixmap alloc: 01c004c8
<- X_CreatePixmap: client 14
** Pixmap free:  02200009
** Client Disconnect: id 17
** Pixmap free:  01e00180
** Pixmap free:  01e00181
```