X Generic Event Extension

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Chapter 1. Introduction

X was designed to provide 64 event opcodes for all extensions. These events are limited to 32 bytes.

The Generic Event Extension provides a template event for extensions to re-use a single event opcode. GE only provide headers and the most basic functionality, leaving the extensions to interpret the events in their specific context.

GenericEvents may be longer than 32 bytes. If so, the number of 4 byte units following the initial 32 bytes must be specified in the length field of the event.

Chapter 2. Extension Initialization

The name of this extension is "Generic Event Extension"

```
GEQueryVersion
    client-major-version: CARD16
    client-minor-version: CARD16
==>
    major-version:        CARD16
    minor-version:        CARD16
```

The client sends the highest supported version to the server and the server sends the highest version it supports, but no higher than the requested version. Major versions changes can introduce incompatibilities in existing functionality, minor version changes introduce only backward compatible changes. It is the clients responsibility to ensure that the server supports a version which is compatible with its expectations.

As of version 1.0, no other requests are provided by this extension.

Chapter 3. Events

GE defines a single event, to be used by all extensions. The event's structure is similar to a reply. This is a core protocol event, ID 35, and is not itself an extension event.

```
GenericEvent
    type:           BYTE       always GenericEvent (35)
    extension:      CARD8      extension offset
    sequenceNumber: CARD16     low 16 bits of request seq. number
    length:         CARD32     length
    evtype:         CARD16     event type
```

The field 'extension' is to be set to the major opcode of the extension. The 'evtype' field is the actual opcode of the event. The length field specifies the number of 4-byte blocks after the initial 32 bytes. If length is 0, the event is 32 bytes long.

Chapter 4. Notes

Although the wire event is of arbitrary length, the actual size of an XEvent is restricted to sizeof(XEvent) [96 bytes, see Xlib.h]. If an extension converts a wire event to an XEvent > 96 bytes, it will overwrite the space allocated for the event. See struct _XSQEvent in Xlibint.h for details.

Extensions need to malloc additional data and fill the XEvent structure with pointers to the malloc'd data. The client then needs to free the data, only the XEvent structure will be released by Xlib.

The server must not send GenericEvents longer than 32 bytes until it has verified that the client is able to interpret these events. If a long event is sent to a client unable to process GenericEvents, future interpretation of replies and events by this client will fail.