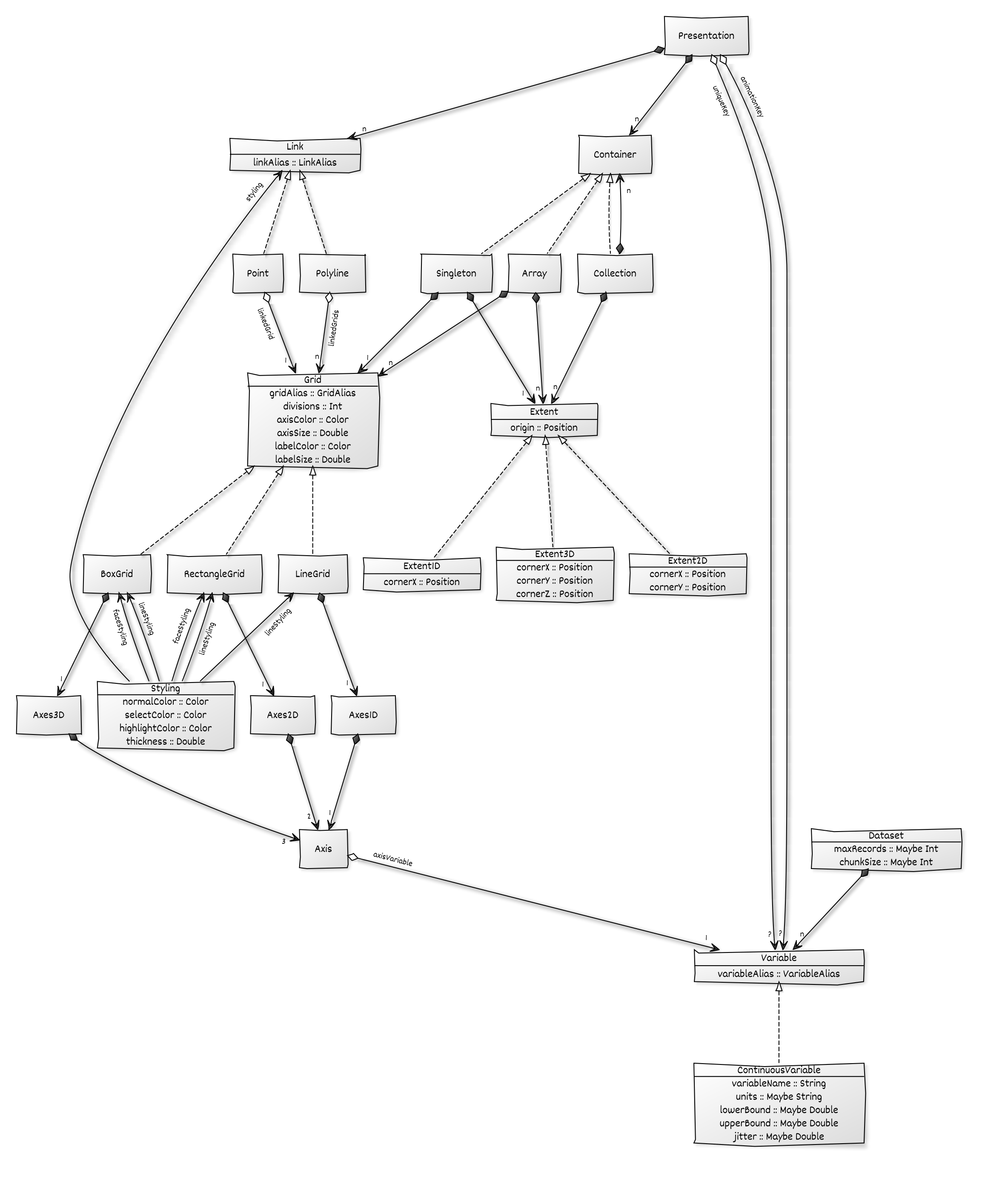
InfoVis Parallel

Technical Manual

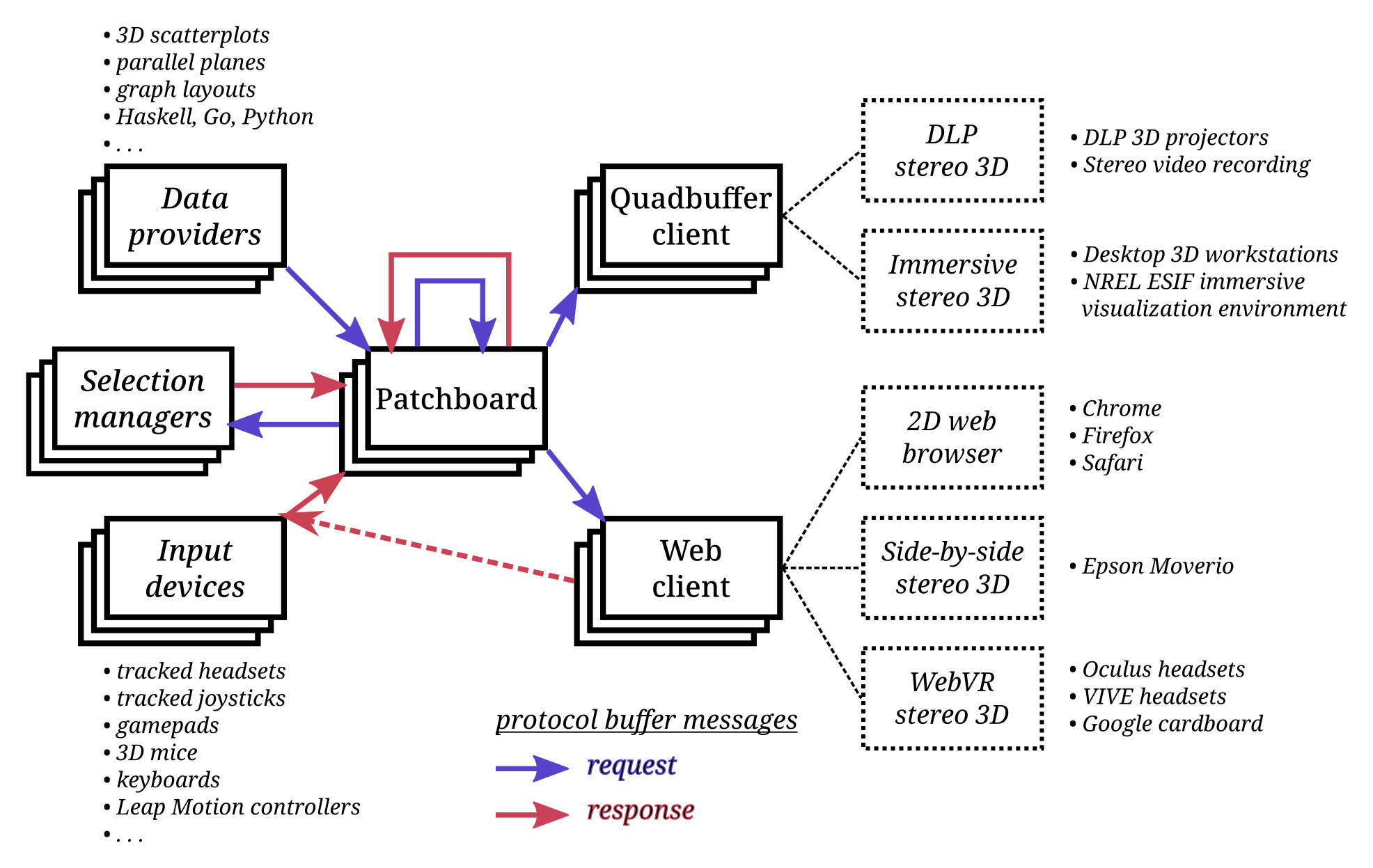
10 January 2020

## Visualization language



Visualization language.

## Architecture



Architecture.

## Protocol buffer specification

### Prelude

syntax = "proto3";  
  
package Infovis;

### Request message

message Request {  
 int32 show = 1; // 0 = no change  
 string message = 2; // "" = no change  
 bool reset = 3;  
 repeated Geometry upsert = 4;  
 repeated int64 delete = 5;  
 Location viewloc = 6;  
 Location toolloc = 7;  
 Location offsetloc = 8;  
}

### Response message

message Response {  
 int32 shown = 1;  
 string message = 2;  
 repeated int64 hover = 3;  
 repeated int64 unhover = 4;  
 repeated int64 select = 5;  
 repeated int64 deselect = 6;  
 Location viewloc = 7;  
 Location toolloc = 8;  
 Location offsetloc = 9;  
 fixed32 depressed = 10;  
 fixed32 pressed = 11;  
 fixed32 released = 12;  
 repeated double analog = 13;  
}

### Geometry message

message Geometry {  
 int32 fram = 1; // 0 = all  
 int64 iden = 2;  
 int32 type = 3; // 0 = all, 1 = points, 2 = polylines,  
 // 3 = rectangles, 4 = label, 5 = axis  
 int32 mask = 4;  
 repeated int32 cnts = 5;  
 repeated double posx = 6; // mask = 00001b = 1  
 repeated double posy = 7; // mask = 00001b = 1  
 repeated double posz = 8; // mask = 00001b = 1  
 double size = 9; // mask = 00010b = 2  
 fixed32 colr = 10; // mask = 00100b = 4  
 string text = 11; // mask = 01000b = 8  
 int32 glyp = 12; // mask = 10000b = 16;  
 // 0 = cubes/boxes for points/polylines,  
 // 1 = spheres/cylinders  
}

### Location message

message Location {  
 double posx = 1;  
 double posy = 2;  
 double posz = 3;  
 double rotw = 4;  
 double rotx = 5;  
 double roty = 6;  
 double rotz = 7;  
}

## Patchboard command-line application

absorber 'sink'  
add-sink 'relay' [sink]...  
add-source 'relay' [source]...  
append 'source' [filename]...  
converter 'relay' [show] [view] [tool] [offset]  
delete [source|sink|relay]...  
exit  
files 'source' [filename]...  
filter 'relay' [show] [message] [reset] [upsert] [delete] [view] [tool] [offset]  
help  
kafka 'address' [true|false] 'topic'  
printer 'sink' (Request|Response)  
relay 'relay'  
relays  
remove-sink 'relay' [sink]...  
remove-source 'relay' [source]...  
reset [source]...  
script [file]...  
serve 'address' 'path'  
silent  
sinks  
sources  
verbose  
wait 'seconds'  
websocket 'path'