

Sysbas1B

Welkom!

SuperCollider

SuperCollider



Wat is SuperCollider?

programmeertaal voor muziek en geluid

- synthese
- sampling
- effecten
- analyse

Open Source

Wat gaan we doen

instrument aanstuurbaar met OSC/MIDI

Wat is SuperCollider?

2 programma's

server & language

SuperCollider IDE

SuperCollider server

Voert alle berekeningen uit (DSP)

moet opgestart worden

(cmd/ctrl + B || s.boot)

communiceert via OSC met language-deel

SuperCollider language

Taal - stuurt server aan

- sequences
- composities
 - midi
 - OSC

SuperCollider - IDE

The screenshot displays the SuperCollider IDE interface. The main window is titled "Untitled - SuperCollider IDE" and contains an "Untitled" document. A help browser window is open on the right, showing the "SuperCollider 3.13.0" documentation home page. The help browser includes a search bar, a "Browse" button, and a "Table Of Contents" dropdown. The main content of the help browser is titled "SuperCollider 3.13.0" and includes a description of the software, a "NOTE" section, and several sections for navigation: "Search and browse", "Getting started", "Glossary", "Client vs Server", and "More on Getting Help". Below the help browser, a terminal window is open, showing the output of a compilation process. The terminal output includes the following text:

```
SuperCollider/downloaded-quarks/Batlib'  
numentries = 1280902 / 19759728 = 0.065  
5853 method selectors, 3376 classes  
method table size 20902280 bytes, big table size 158077824  
Number of Symbols 15055  
Byte Code Size 449310  
compiled 561 files in 0.49 seconds  
compile done  
localhost : setting clientID to 0.  
internal : setting clientID to 0.  
Class tree inited in 0.01 seconds  
  
*** Welcome to SuperCollider 3.13.0. *** For help press Cmd-D.  
SCDoc: Indexing help-files...  
SCDoc: Indexed 1929 documents in 0.51 seconds
```

At the bottom of the terminal window, the status bar shows "Interpreter: Active Server: 0.00% 0.00% 0u 0s 0g 0d 0.0dB".

SuperCollider - IDE - code editor

The screenshot displays the SuperCollider IDE interface. The main window is titled "Untitled - SuperCollider IDE" and contains a code editor with a blank document labeled "Untitled". To the right, a "Help browser" window is open, displaying the "SuperCollider 3.13.0" documentation page. The documentation page includes a search bar, a "Browse" button, and a "Table Of Contents" dropdown. The main content of the help page is titled "SuperCollider 3.13.0" and includes a "Documentation home" link, a description of SuperCollider as an audio server, programming language, and IDE, and a "NOTE: News in SuperCollider version 3.13" section. Below this, there are sections for "Search and browse", "Getting started", and "More on Getting Help".

Help browser
Home Find in page...
SuperCollider Browse Search Indexes Table Of Contents
SuperCollider 3.13.0
Documentation home
SuperCollider is an audio server, programming language, and IDE for sound synthesis and algorithmic composition.
NOTE: News in SuperCollider version 3.13
Search and browse
Search
Search all documents and methods
Browse
Browse all documents by categories
Getting started
These are useful starting points for getting help on SuperCollider:
[Getting Started tutorial series](#)
Get started with SuperCollider
Glossary
Glossary
Client vs Server
Explaining the client vs server architecture
More on Getting Help
How to find more help
Post window Auto Scroll
SuperCollider/downloaded-quarks/Batlib'
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Interpreter: Active Server: 0.00% 0.00% 0u 0s 0g 0d 0.0dB

SuperCollider - IDE - help browser

The screenshot displays the SuperCollider IDE interface. The main window is titled "Untitled - SuperCollider IDE" and contains a text editor with the word "Untitled" on the line. A help browser window is open on the right, showing the "SuperCollider 3.13.0" documentation home page. Below the help browser, a "Post window" displays the output of a compilation process.

Help browser content:

- SuperCollider 3.13.0
- Documentation home
- SuperCollider is an audio server, programming language, and IDE for sound synthesis and algorithmic composition.
- NOTE: News in SuperCollider version 3.13
- Search and browse**
- Search**: Search all documents and methods
- Browse**: Browse all documents by categories
- Getting started**
- These are useful starting points for getting help on SuperCollider:
- Getting Started tutorial series**: Get started with SuperCollider
- Glossary**: Glossary
- Client vs Server**: Explaining the client vs server architecture
- More on Getting Help**: How to find more help

Post window content:

```
SuperCollider/downloaded-quarks/Batlib'  
numentries = 1280902 / 19759728 = 0.065  
5853 method selectors, 3376 classes  
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SCDoc: Indexing help-files...  
SCDoc: Indexed 1929 documents in 0.51 seconds
```

Interpreter: Active Server: 0.00% 0.00% 0u 0s 0g 0d 0.0dB

SuperCollider - IDE - post window

The screenshot displays the SuperCollider IDE interface. The main window is titled "Untitled - SuperCollider IDE" and contains a text editor with the word "Untitled" on the first line. On the right side, there is a "Help browser" window showing the "SuperCollider 3.13.0" documentation home page. Below the help browser, a "Post window" is open, displaying the output of a compilation process. The Post window content is as follows:

```
Post window
SuperCollider/downloaded-quarks/Batlib'
numentries = 1280902 / 19759728 = 0.065
5853 method selectors, 3376 classes
method table size 20902280 bytes, big table size 158077824
Number of Symbols 15055
Byte Code Size 449310
compiled 561 files in 0.49 seconds
compile done
localhost : setting clientID to 0.
internal : setting clientID to 0.
Class tree inited in 0.01 seconds

*** Welcome to SuperCollider 3.13.0. *** For help press Cmd-D.
SCDoc: Indexing help-files...
SCDoc: Indexed 1929 documents in 0.51 seconds
```

At the bottom of the IDE, the status bar shows "Interpreter: Active Server: 0.00% 0.00% 0u 0s 0g 0d 0.0dB".

SuperCollider - IDE - server status

The screenshot shows the SuperCollider IDE interface. The main window is titled "Untitled - SuperCollider IDE" and contains a blank "Untitled" document. A help browser window is open on the right, displaying the "SuperCollider 3.13.0" documentation home page. The page includes a search bar, a "Browse" button, and a "Table Of Contents" dropdown. Below the search bar, there are sections for "Search and browse", "Getting started", and "More on Getting Help".

The help browser window also shows a "Post window" with the following text:

```
SuperCollider/downloaded-quarks/Batlib'  
numentries = 1280902 / 19759728 = 0.065  
5853 method selectors, 3376 classes  
method table size 20902280 bytes, big table size 158077824  
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*** Welcome to SuperCollider 3.13.0. *** For help press Cmd-D.  
SCDoc: Indexing help-files...  
SCDoc: Indexed 1929 documents in 0.51 seconds
```

At the bottom of the IDE, a status bar shows the following information: Interpreter: Active Server: 0.00% 0.00% 0u 0s 0g 0d 0.0dB

SuperCollider - basis

- sneltoetsen
 - variabelen
 - functies
- objecten (uGens)
- classes (SynthDef)

Sneltoetsen

cmd/ctrl + enter = code uitvoeren

cmd/ctrl + . = code stoppen

cmd/ctrl + D = documentatie lezen

cmd/ctrl + M = server meter weergeven

cmd/ctrl + B = server aanzetten

Variabelen

globale variabelen:

```
~test = "hallo"
```

```
~test.println;
```

kan maar heeft niet de voorkeur:

```
a = 4 + 4;
```

```
a.println;
```

post window

met `.postln` stuur je iets naar de post-window:

```
~test = "hallo"
```

```
~test.postln;
```

laatste regel wordt altijd gepost

```
"hai".postln;
```

```
3+3;
```

beiden zijn zichtbaar

Variabelen

lokale variabelen:

```
{  
  var amp = 0.5;  
  SinOsc.ar(440,0,amp);  
}.play;
```

Functies

Functies altijd tussen `{}`

```
~functieNaam = {  
    SinOsc.ar(440, 0, amp);  
}
```

Functies - uitvoeren

Functies altijd tussen `{}`

```
~functieNaam = {
```

```
    sinOsc.ar(440,0,amp);
```

```
}
```

```
~functieNaam.play; //afspelen
```

```
~functieNaam.scope; // in spectroscop laten zien
```

```
~functienaam.plot; // in oscilloscoop laten zien
```

Functies - uitvoeren

Pas op!

SuperCollider heeft geen standaard limiter

Dus als je iets te luid uitstuurt, dan is het luid!

luid!

heel luid!

uGens

Unit generators - vergelijkbaar met objecten in Max

```
sinOsc.ar();
```

```
BLowPass.ar();
```

```
Delay1.ar();
```

```
FreeVerb.ar();
```

```
LFSaw.kr();
```

```
.ar = audio rate
```

```
.kr = kontrol rate
```

uGens - mul & add

Unit generators - vergelijkbaar met objecten in Max

```
sinOsc.ar(freq,phase,mul,add);
```

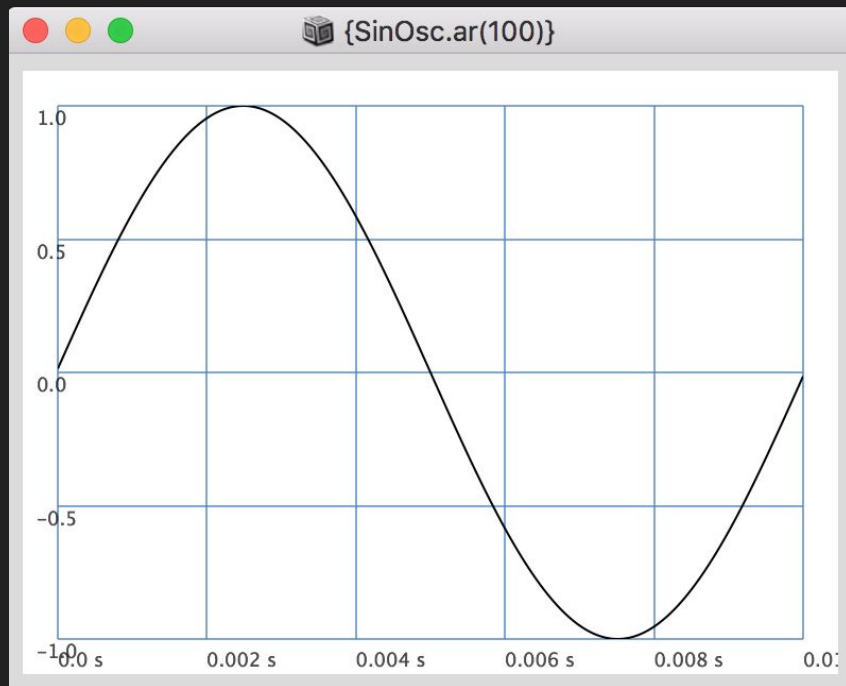
```
BLowPass.ar(in,freq,q,mul,add);
```

```
mul = multiplication
```

```
add = add to signal
```

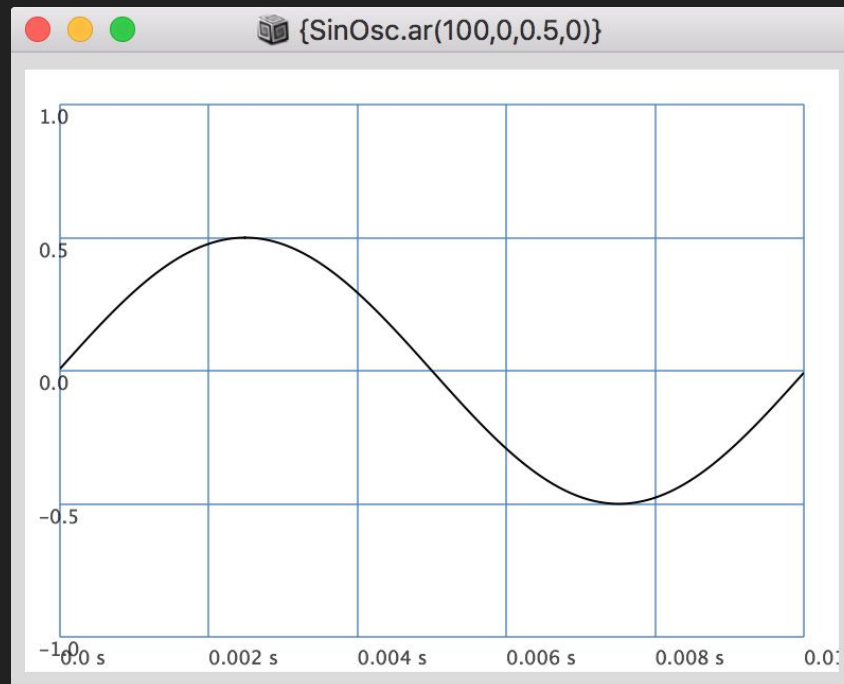
uGens - mul & add

mul: 1 - add: 0



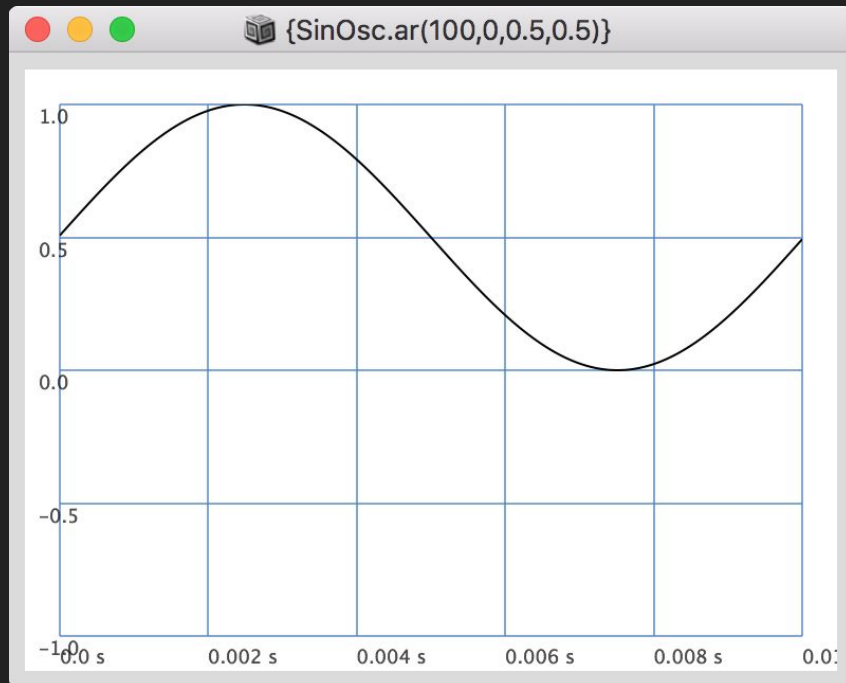
uGens - mul & add

mul: 0.5 - add: 0



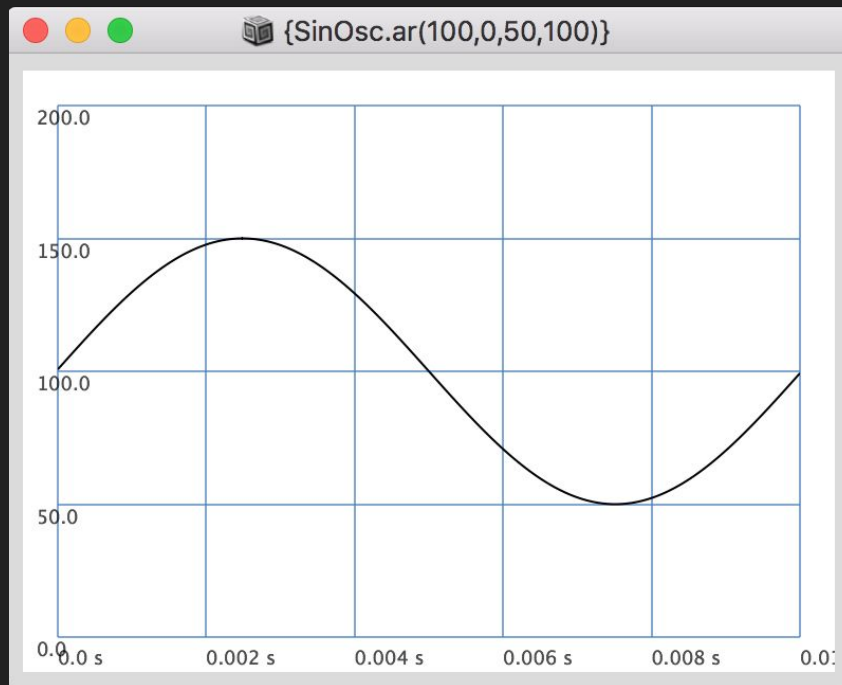
uGens - mul & add

mul: 0.5 - add: 0.5



uGens - mul & add

mul: 50 - add: 100



uGens - overige argumenten

Unit generators - Overige argumenten verschillen per uGen, zie documentatie voor meer informatie.

```
sinOsc.ar(freq,phase,mul,add);
```

```
BLowPass.ar(in,freq,q,mul,add);
```

uGens - nesting

Zet een andere uGen in plaats van een argument:

```
{  
  var in = LFSaw.ar(440,0,0.5,0);  
  BLowPass.ar(in,SinOsc.ar(0.5, 0, 250, 500), 0.5);  
}.play;
```

Sinus-oscillator moduleert de frequentie van een lowpass-filter - tussen de 250 en 750 hZ

Als je een waarde niet invult (aan het eind) wordt de default-waarde gebruikt.

uGens - stereo

Standaard zendt een uGen een mono-sigitaal uit

```
{  
  var in = LFSaw.ar(440,0,0.5,0);  
  BLPass.ar(in,SinOsc.ar(0.5, 0, 250, 500), 0.5);  
}.play;
```

Als je het meerkanaals wil maken, moet je ergens een waarde als array aangeven:

```
{  
  var in = LFSaw.ar([440,441],0,0.5,0);  
  BLPass.ar(in,SinOsc.ar(0.5, 0, 250, 500), 0.5);  
}.play;
```