

**Application Note: AN10038** 

## How to nest combinable function calls

This application note is a short how-to on programming/using the xTIMEcomposer tools. It shows how to nest combinable function calls.

## Required tools and libraries

This application note is based on the following components:

• xTIMEcomposer Tools - Version 14.0.0

## Required hardware

Programming how-tos are generally not specific to any particular hardware and can usually run on all XMOS devices. See the contents of the note for full details.

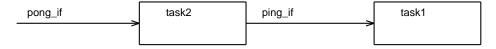


## 1 How to nest combinable function calls

Suppose you have two combinable functions:

```
interface ping_if {
 void ping();
};
interface pong_if {
 void pong();
};
[[combinable]]
void task1(server interface ping_if i)
  while(1) {
    select {
    case i.ping():
      printf("Task1 received a ping!\n");
      break;
 }
}
[[combinable]]
void task2(server interface pong_if i_pong, client interface ping_if i_ping)
  while (1) {
    select {
    case i_pong.pong():
      i_ping.ping();
      break;
  }
}
```

Sometimes, functions are always expected to be connected and combined together. So task1 and task2 are always supposed to be connected:

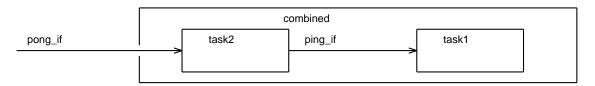


It is possible to create a new function definition that contains a combined par statement consisting of these two tasks:

```
[[combinable]]
void combined(server interface pong_if i_pong)
{
  interface ping_if i_ping;
  [[combine]]
  par {
    task1(i_ping);
    task2(i_pong, i_ping);
  }
}
```

This groups the tasks together:





It is then possible to combine this new task with other combinable tasks:

```
[[combinable]] void task3(client interface pong_if i);
int main() {
  interface pong_if i;
  par {
    on tile[0].core[0]: combined(i);
    on tile[0].core[0]: task3(i);
  }
  return 0;
}
```



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