VERIFICATION ACADEMY

Basic OVM

Connecting Components

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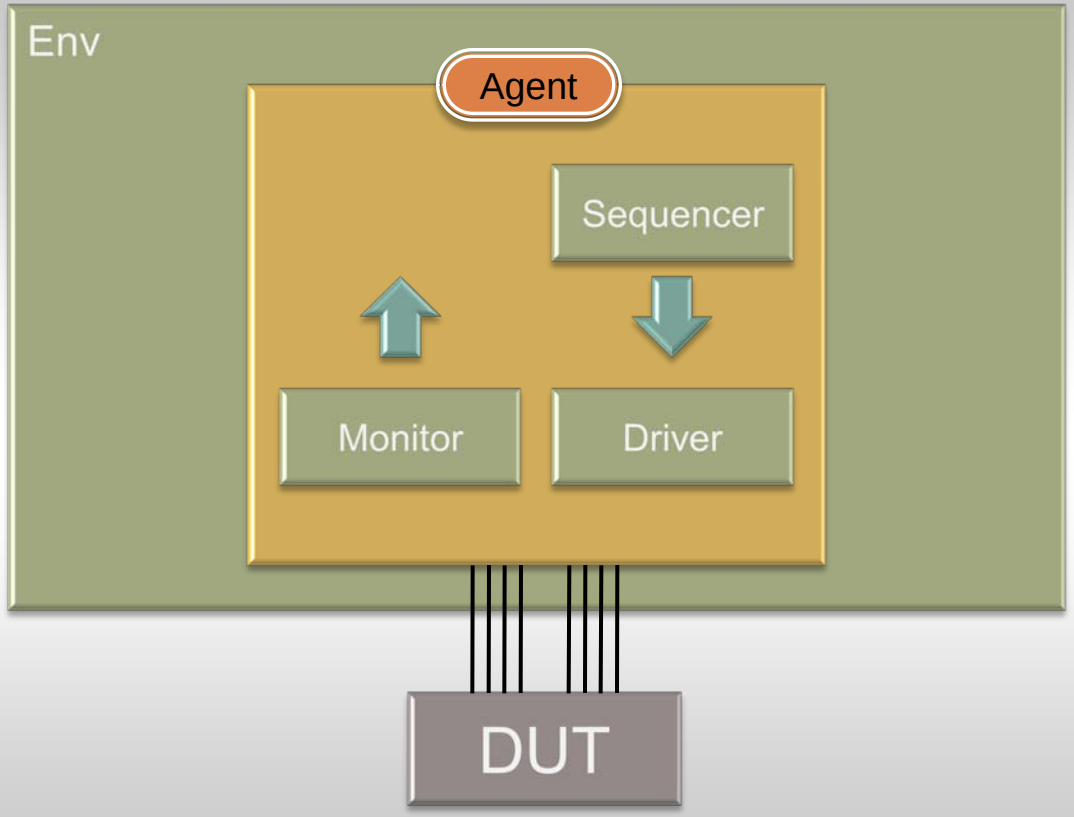
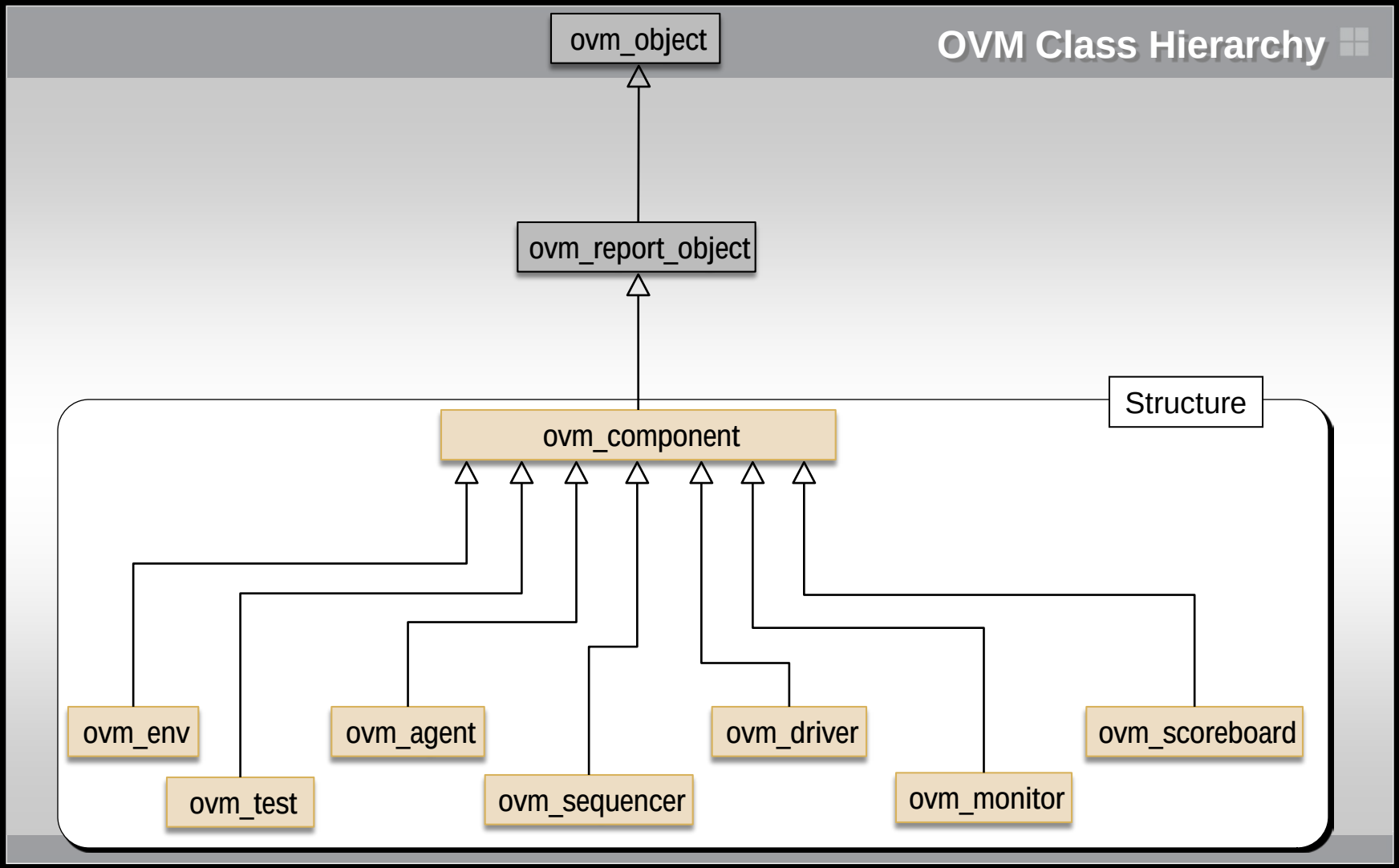
Verification Components



OVM Class Hierarchy



Component

```
class my_agent extends ovm_agent;
```

Component

```
class my_agent extends ovm_agent;
  `ovm_component_utils(my_agent)

  my_sequencer my_sequencer_h;
  my_driver    my_driver_h;
```

Component

```
class my_agent extends ovm_agent;
  `ovm_component_utils(my_agent)

  my_sequencer my_sequencer_h;
  my_driver    my_driver_h;

  function new(string name, ovm_component parent);
    super.new(name, parent);
  endfunction: new

  function void build;
    ...

  function void connect;
    ...
```

Factory Method

```
function void build;
  super.build();
  my_sequencer_h =
    my_sequencer::type_id::create("my_sequencer_h", this);

  my_driver_h    =
    my_driver   ::type_id::create("my_driver_h"   , this);
endfunction: build
```

Instance name

Parent

"Factory methods" can be overridden in tests

Connect

```
function void build;
  super.build();
  my_sequencer_h =
    my_sequencer::type_id::create("my_sequencer_h", this);

  my_driver_h    =
    my_driver   ::type_id::create("my_driver_h"   , this);
endfunction: build

function void connect;
  my_driver_h.seq_item_port.connect(
    my_sequencer_h.seq_item_export );
endfunction: connect
```

Connect

```
function void build;
  super.build();
  my_sequencer_h =
    my_sequencer::type_id::create("my_sequencer_h", this);

  my_driver_h    =
    my_driver   ::type_id::create("my_driver_h"   , this);
endfunction: build

function void connect;
  my_driver_h.seq_item_port.connect(
    my_sequencer_h.seq_item_export );
endfunction: connect
```

Phase Methods

```
class my_component extends ovm_component;
  ...
```

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class my_component extends ovm_component;
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  function new(string name, ovm_component parent);
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```

Phase Methods

```
class my_component extends ovm_component;
  ...
  function new(string name, ovm_component parent);
    super.new(name, parent);
  endfunction: new
  function void build;
    super.build();
    ...
```

Called top-down

Phase Methods

```
class my_component extends ovm_component;
  ...
  function new(string name, ovm_component parent);
    super.new(name, parent);
  endfunction: new
  function void build;
    super.build();
    ...
  function void connect;
    ...
```

Called bottom-up

Phase Methods

```
class my_component extends ovm_component;
  ...
  function new(string name, ovm_component parent);
    super.new(name, parent);
  endfunction: new
  function void build;
    super.build();
    ...
  function void connect;
    ...
  function void start_of_simulation;
    ...
```

Phase Methods

```
class my_component extends ovm_component;
  ...
  function new(string name, ovm_component parent);
    super.new(name, parent);
  endfunction: new
  function void build;
    super.build();
    ...
  function void connect;
    ...
  function void start_of_simulation;
    ...
  task run;
    ...
```

The only task

Phase Methods

```
class my_component extends ovm_component;
  ...
  function new(string name, ovm_component parent);
    super.new(name, parent);
  endfunction: new
  function void build;
    super.build();
    ...
  function void connect;
    ...
  function void start_of_simulation;
    ...
  task run;
    ...
  function report;
    ...
```

Anatomy of an OVM Component

```
class my_component extends ovm_component;
  `ovm_component_utils(my_component)

  virtual dut_if dut_if_h;

  my_sequencer my_sequencer_h;
  my_driver    my_driver_h;

  function new(string name, ovm_component parent); ...
  function void build; ...
  function void connect; ...
  function void start_of_simulation; ...
  task run; ...
  function check; ...
  function report; ...
endclass
```

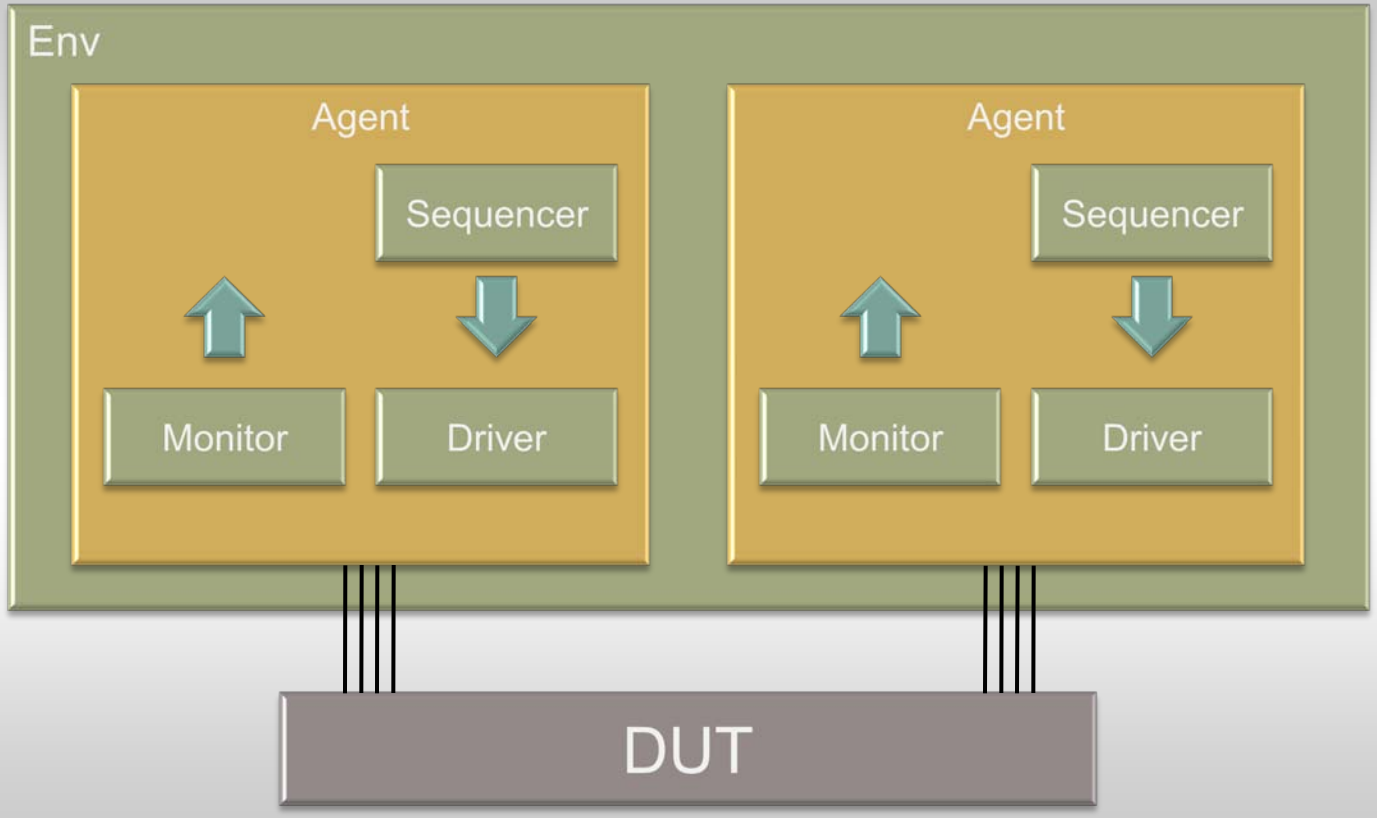
Factory registration

External interfaces

Internal component handles

Standard phase methods

Summary


Env
Agent
Sequencer
Monitor
Driver
Agent
Sequencer
Monitor
Driver
DUT

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