

Lucid Cheat Sheet

Event Declarations

```
event foo(type1 id1, type2 id2, ..., typeN idN);
```

Declares an event named `foo` that takes arguments `id1`, `id2`, ..., `idN` of types `type1`, `type2`, ..., `typeN`.

Event Values

```
event x = foo(arg1, arg2, ..., argN);
```

Creates an event value of type `foo` containing `arg1`, `arg2`, ..., `argN` and stores it in variable `x`.

Event Generation

Events are generated using **generate** statements to serialize events and send them to queues. Types include:

- `generate_port(n, x);`
Serializes event `x` into a packet and sends it to port `n`.
- `generate_ports(g, x);`
Sends event `x` to all ports in group `g`.
- `generate(x);`
Queues event `x` for recirculation on the current switch

Packet Events

```
packet event foo(type1 id1, type2 id2, ..., typeN idN);
```

Defines a packet-based event `foo` where arguments `id1`, `id2`, ..., `idN` are packed directly into the packet. Example:

```
packet event eth_ip(eth_hdr_t eth, ip_hdr_t ip, Payload.t pl);
```

Enables creation of standard IP packets but requires custom parsers for deserialization.