



SAI and Programmable Forwarding Planes

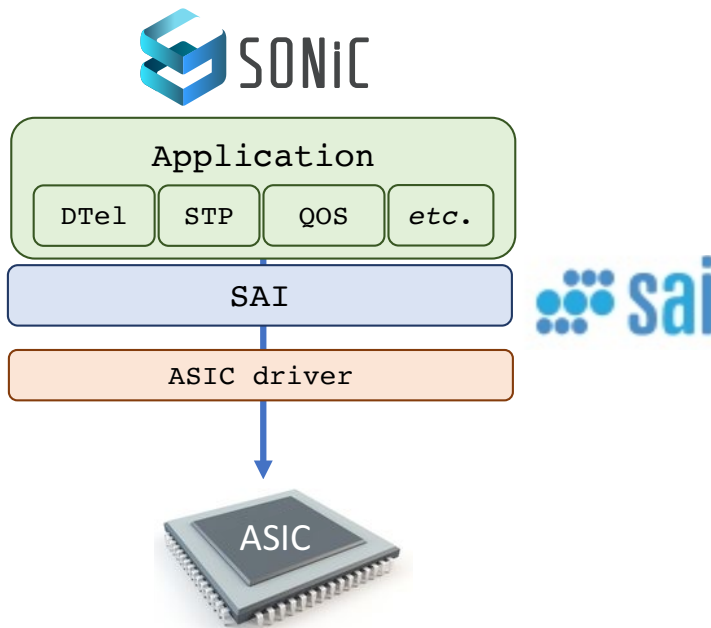
SAI Workshop

March 22, 2018

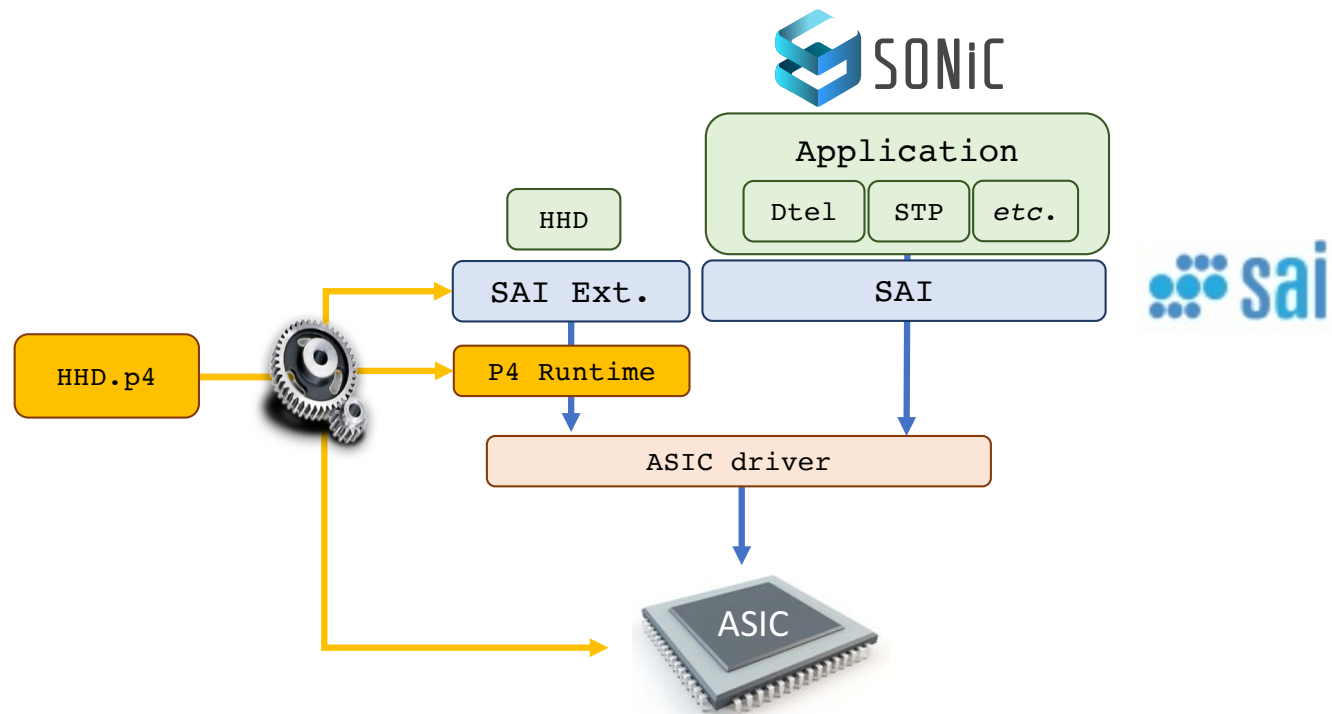
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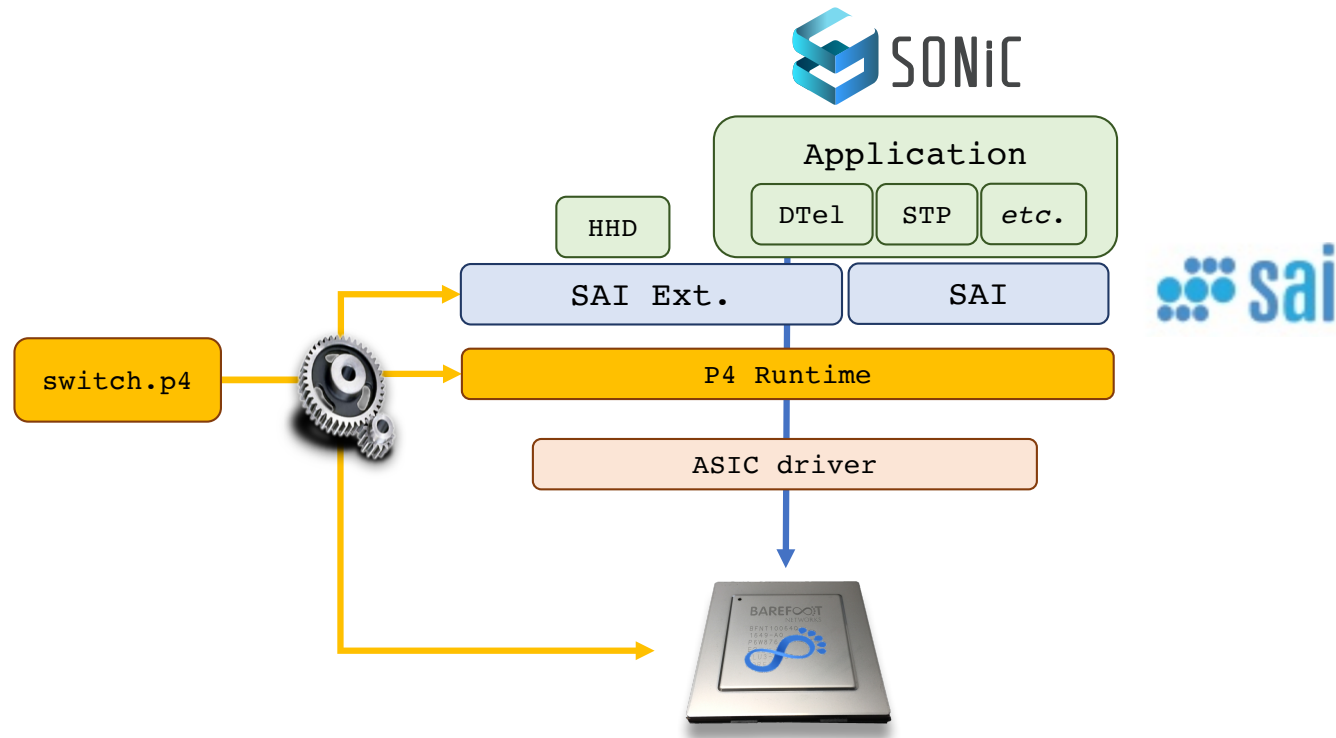
SAI with Fixed Function Switch



SAI Extensibility with Programmable Switch



SAI Extensibility with Fully P4-Programmable Switch



SAI API and P4 Runtime Info generated from P4

HHD.p4

```
// hhd.p4

action hhd_attr_set() {
    /* Set attribute */
}

@sai_obj
table hhd {
    read = {
        ingress_port : exact;
        // keys
    }

    action = {
        hhd_attr_set;
    }
}
```



```
typedef enum _sai_api_t {
    // Other SAI objects
    SAI_API_HHD = 100,    /**< sai_api_hhd_t */
} sai_api_t
```

SAI Extension API

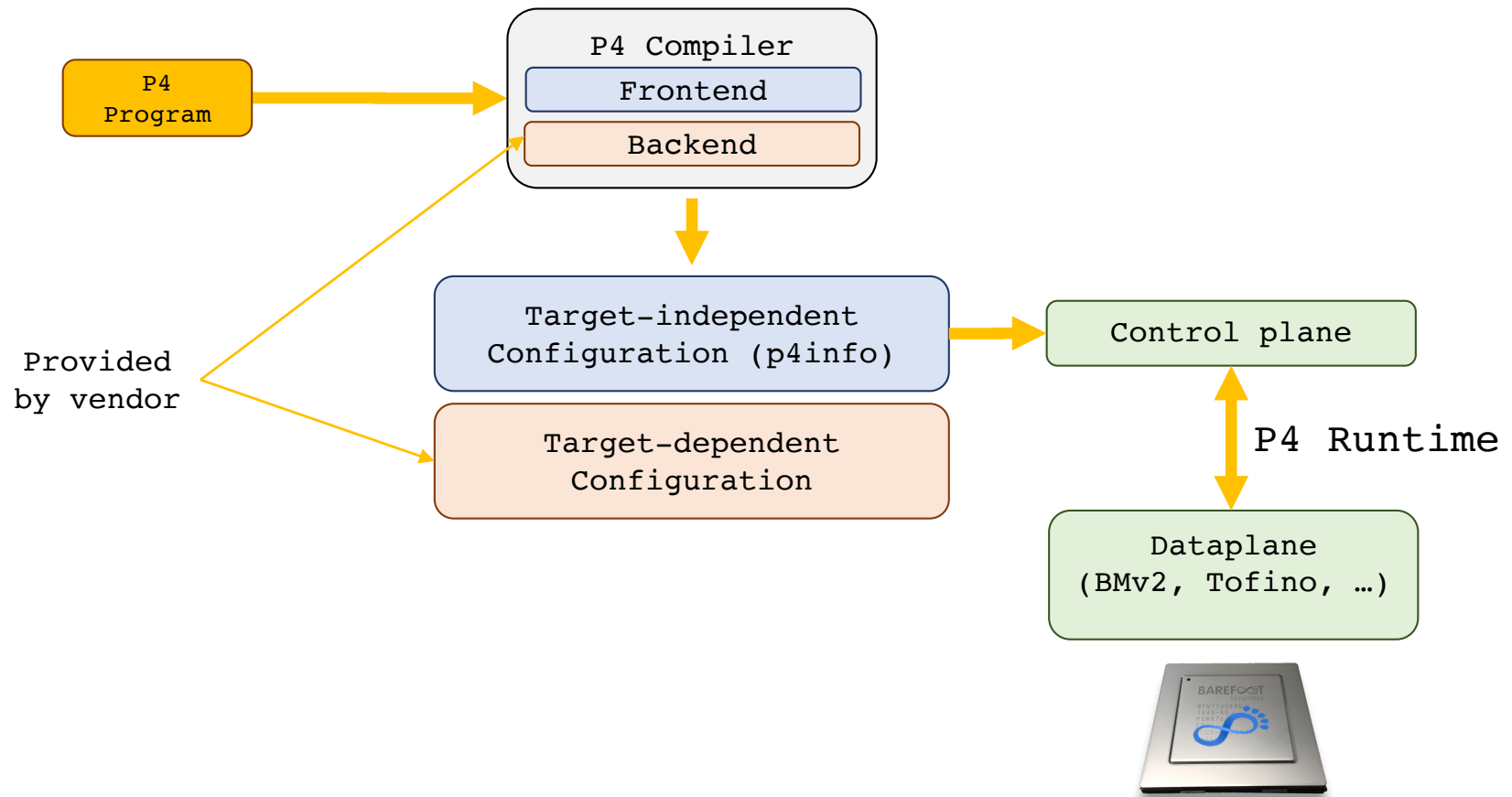
```
typedef enum _sai_hhd_attr_t {
    SAI_HDD_ATTR_START,
    // Attributes
    SAI_HDD_ATTR_END
} sai_hhd_attr_t
```

```
tables {
    id: 33581985
    name: hdd
    match_fields {
        id: 1
        name: ingress_port
        bit_width: 16
        match_type: EXACT
    }
    action_ref {
        id : 16812204
    }
}
```

P4 Runtime Info

Thank you

P4 Runtime workflow



1
Protocol
Authoring

2
Compile

3
Configure

