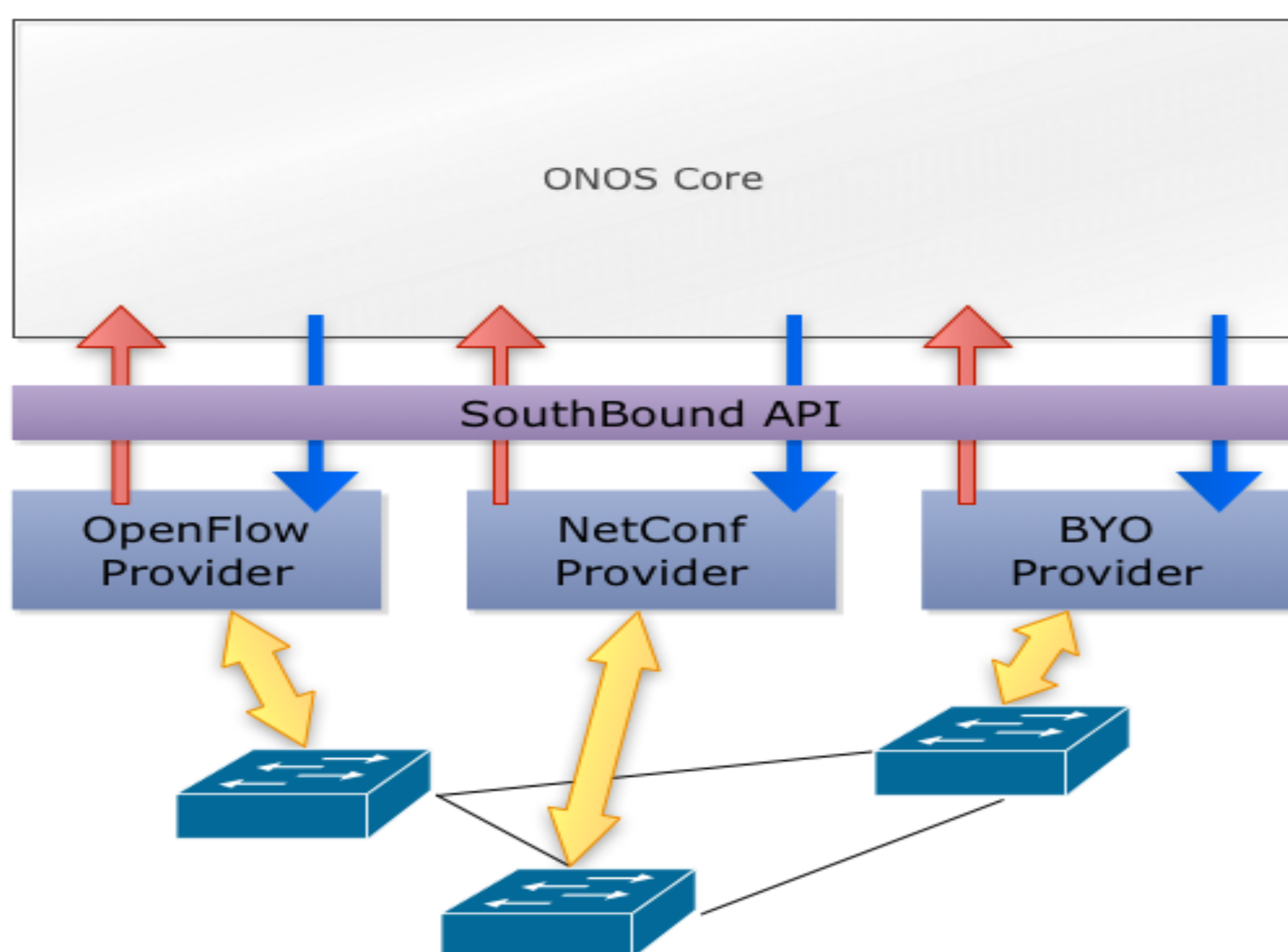


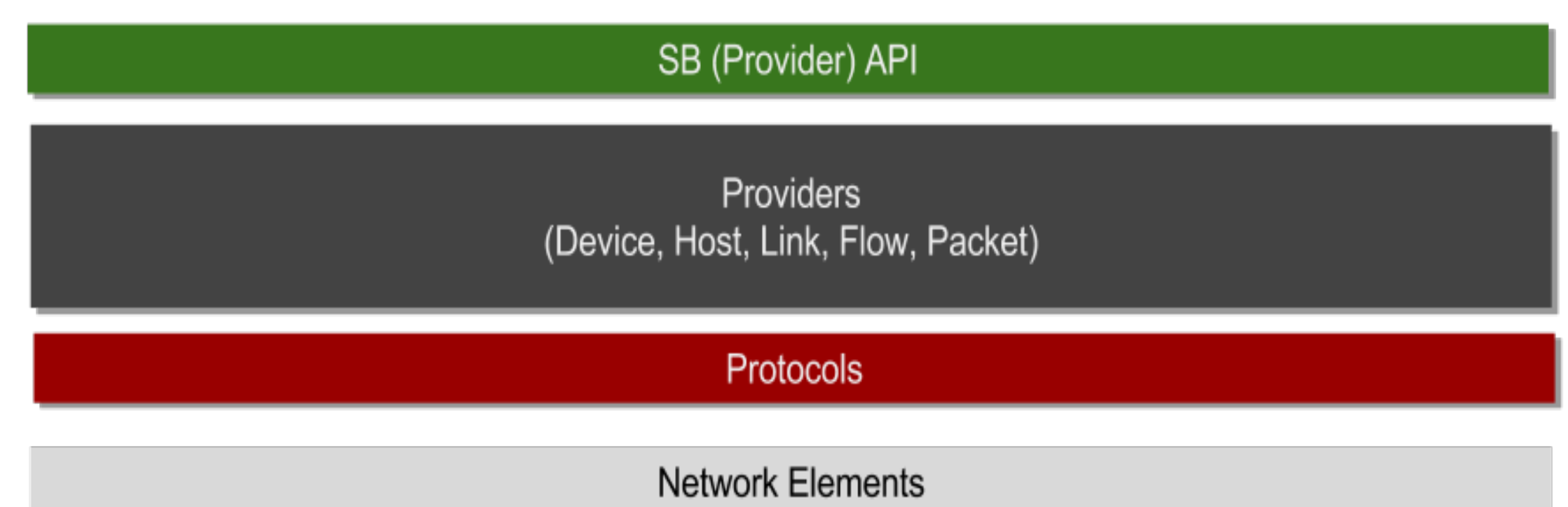
Introduction

- ONOS supports multiple southbound protocols, enabling a transition to true SDN.
- Providers provide descriptions of dataplane elements to the core - core utilizes this information.
- Providers hide protocol complexity from ONOS.



Architectural Concepts

- Provider mechanism is a generic method to feed information into ONOS
- Enables company to submit its own device/protocol specific provider
- Providers absorb **any** protocol specific behavior or requirement.



Message Passing Model

- Descriptions of network elements are passed to the core as ephemeral messages
- Descriptions are immutable and extremely short lived
- Description contains a URI for the object it is describing
- URI also encodes the provider the device is linked to



Provider Lifecycle

1. Provider registers with core
 - a. Core returns a ProviderService bound to the Provider
2. Provider uses ProviderService to notify core of new events (device connected, pktin) via Descriptions
3. Core can use provider to issue commands to elements under provider control
4. Eventually, the provider unregisters itself; core will invalidate the ProviderService

