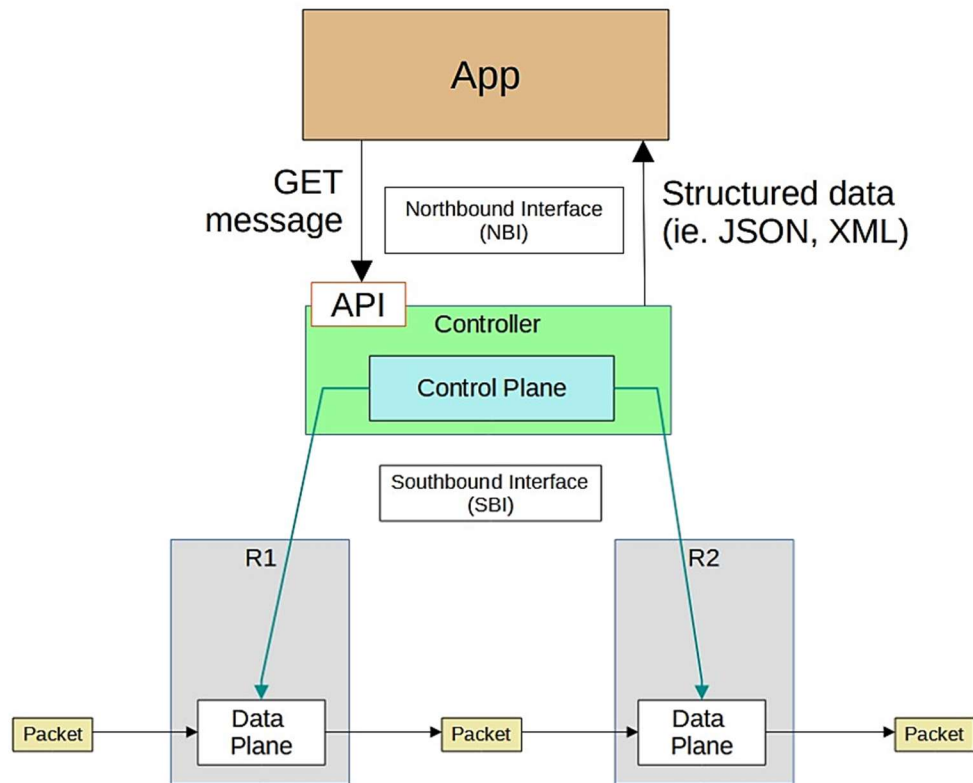


## MAIN COMPONENTS OF SDN ARCHITECTURE



- Using the **Southbound Interface (SBI)**, the controller communicates with the managed devices and gathers information about them:
  - The devices in the network
  - The topology (how the devices are connected together)
  - The available interfaces on each device
  - Their configurations
- It typically consists of a communication protocol and API (Application Programming Interface).
- APIs facilitate data exchanges between programs.
  - Data is exchanged between the controller and the network devices.
  - An API on the network devices allows the controller to access information on the devices, control their data plane tables, etc.
- Some examples of SBIs:
  - OpenFlow
  - Cisco OpFlex
  - Cisco onePK (Open Network Environment Platform Kit)
  - NETCONF
- The **Northbound Interface (NBI)** is what allows us to interact with the controller, access the data it gathers about the network, program it, and make changes in the network via the SBI.
- A REST API is used on the controller as an interface for apps to interact with it.
  - REST = Representational State Transfer
- Data is sent in a structured (serialized) format such as JSON or XML.
  - This makes it much easier for programs to use the data.