Data Models:

Data models describe the things you can configure, monitor, and the actions you can perform on a network device. A data model is a description of how data must be encoded for information exchange between two entities. A data model describes how data is represented and accessed.

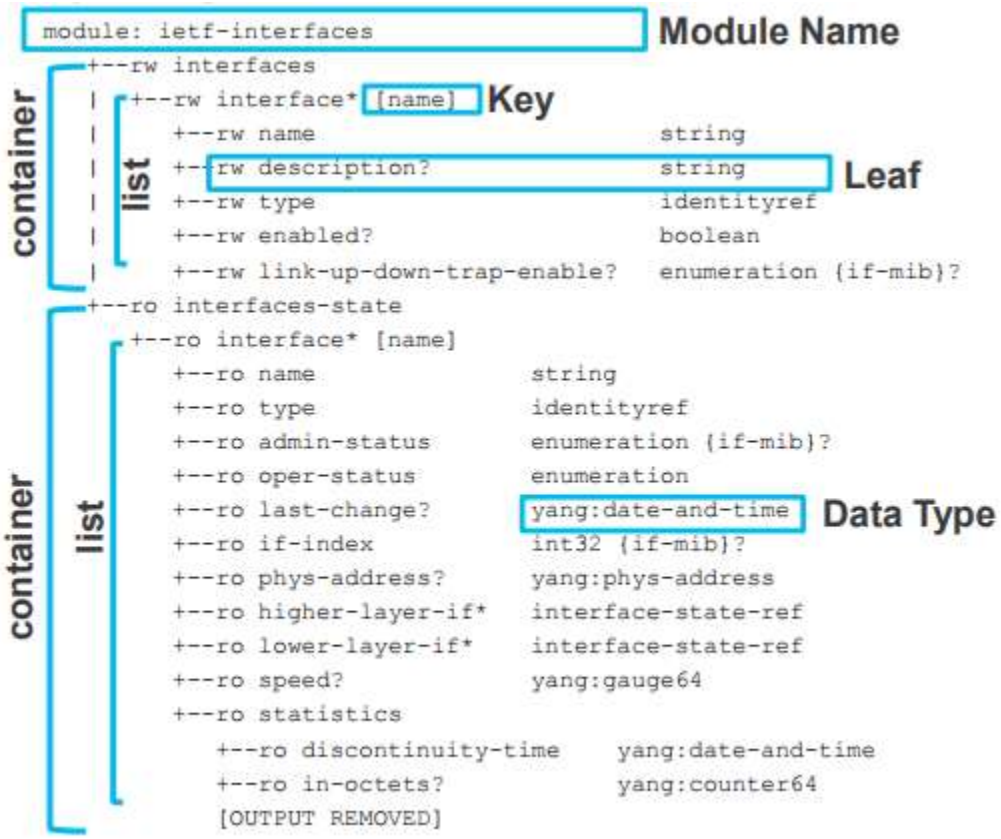
So, what is a data model of a network device? To answer that, let's imagine a hypothetical scenario where your friend asks you what IP interface attributes can be configured on a specific router. You might say: "Well, to configure an interface on this router, you need to supply: an interface name, an IP address, and a subnet mask. You also need to enable the interface - the router will keep the interface disabled if you don't." Now, as simple as this response, what we just did was describe a data model for an IP interface. A YANG model will do the same but uses strict syntax rules to make the model standardized and easy to process with computers.

Yet Another Next Generation (YANG):

YANG is a text-based data modeling language designed for use with any network management protocol including NETCONF and RESTCONF. YANG is used to model configuration and operational state data as well as general RPC data. YANG used to represent the data on a device in an abstract way but does not contain actual device configuration or operational data; it simply shows the structure. In other words, YANG forms the template from which XML/JSON data is generated and does not represent the actual data.

SNMP is widely used to monitor networks. You can use SNMP to configure network devices. YANG is a modeling language and uses data models that are similar to SNMP Management Information Base (MIBs). A language for building and defining data models. Can be used to build data models for any kind of data. These data models allow a uniform way for us to configure, monitor, and interact with network devices. Network automation tools like NETCONF, RESTCONF, and gRPC require YANG data models. YANG uses a hierarchical tree structure, similar to the XML data format. There is a clear distinction between configuration data and state information. A YANG module defines a data model through the data of a network device, and the hierarchical organization and constraints of that data. YANG identifies each module with a namespace URL. YANG modules to describe interface, Access-lists, Routing Tables etc. YANG is a data modelling language, providing a standardized way to model the operational and configuration data of a network device. YANG, being a language is being protocol independent, can then be converted into any encoding format, e.g. XML or JSON.

https://github.com/YangModels/yang



Container:

A collection of information logically grouped. Such a container for configuration, and one for state. Container is like creating an empty folder, that still requires to be filled with data.

List:

Within a container you can have a list or even multiple lists. Such as a list of interfaces.

Key:

Each item within the list is references via a key.

Leaf:

Inside our list we have leaf's. Containing our information. The data that fills a container.

Data Type:

Each leaf is associated against a data type.