A YANG Network Data Model of Network Inventory Software Extensions

draft-wzwb-ivy-network-inventory-software

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Inventory Software Extensions

- The current base inventory is defined for physical Network Element (NE) and hardware component inventory per the IVY weekly call.
- This is an extended model for non-physical NE and software component inventory.
Network Element (NE) Type Extension

• Suggest to be consistent with “ietf-system” to facilitate device model mapping

• **Virtual network devices** are defined. Work on SDN devices, or devices with both virtualized and physical components.

```yml
---rw network-elements
   ---rw network-element* [ne-id]
      +--rw ne-id string
      +--rw ne-type? identityref
      +--rw uuid? yang:uuid
      +--rw name? string
      +--rw description? string
      +--rw alias? string
      +--rw hardware-rev? string
      +--rw software-rev? string
      +--rw mfg-name? string

---rw system
   | +--rw contact? string
   | +--rw hostname? inet:domain-name
   | +--rw location? string
   +--ro system-state
      +--ro platform
         +--ro os-name? string
         +--ro os-release? string
         +--ro os-version? string
         +--ro machine? string

---ro system
   +--ro platform
      +--ro os-name? string
      +--ro os-release? string
      +--ro os-version? string
      +--ro machine? string

---ro platform
   +--ro os-name? string
   +--ro os-release? string
   +--ro os-version? string
   +--ro machine? string
```

“ietf-network-inventory”

“ietf-system”
Software Component Modelling

- **Current model**: *Software components*: operating-system, operating-system-patch, bios, boot-loader, software-module, which is similar to the management of hardware and firmware

- **Issue**: The basic inventory model defines only the software versions of NEs and hardware components. The platform-os patch of the SW component is not covered.

```plaintext
identity non-hardware-component-class {
  description "Base identity for non hardware components (e.g., software components) in a managed device."
}

identity software-component {
  base ni:non-hardware-component;
  description "Base identity for software components in a managed device."
}

identity operating-system {
  base software-component;
  description "OS software type."
}

identity operating-system-patch {
  base software-component;
  description "An operating system update - which should be a subcomponent of the 'operating-system' running on a component. A patch is defined to be a set of software changes that are atomically installed (and uninstalled) together."
}
```
Next Step

• Solicit for WG adoption
• Welcome reviews and comments