**ESXi Hypervisor – vmnix-x86**

**About ESXi Hypervisor**

ESXi Hypervisor is a VMWare hypervisor. On the top of ESXi hypervisor, several Virtual Machines are created on the system.

VCenter server is the centralized service through which multiple ESXi hosts are managed connected in a network.

ESXi is a Hypervisor, meaning it runs directly on system hardware without need for an operating system (OS). This is also known as bare-metal hypervisors because they run directly on hardware.

**Requirement**

1. Need OS and Hardware information about the ESXi running on system same as what we get from any linux or Windows based server.
2. Information is also required to get the relation between running ESXi and all the VM created on top of that ESXi.

**Problem in Standard solution**

Since a normal user cannot be created on ESXi and bash script cannot be scheduled and run to get the OS-Hardware information, It is difficult to get information directly from ESXi.

**Installation of ESXi at Jio**

All the ESXi at JIO are configured and connected to VCenter. There are 10 VCenter placed at different IDC locations and every ESXi is associated with one out of 10 VCenters.

Currently, the existing Discovery tool (HP-UCMDB), pulls the CSV from all 10 VCenters every day. CSV on the VCenter is generated by running few scripts. This CSV is then populated to UCMDB database.

There is API also available but it does not provides all the information that is expected. Hence the script has been used to get the information in CSV.

There are almost 4500 + ESXi running at Jio.

It also provides information about the relation between ESXi and VM created on top of it.

**Methods of discovery of ESXi and Its VM relation**

The same method of getting data from Vcenter to be used. Instead of CSV, JSON will be the choice for data. Same data transport layer will be used to get the data from all 10 VCenter – Filebeat to Kafka – to MySQL DB.

**Sample Output <in JSON>:**

Current the script generated in information in CSV.

The sample of Current CSV is listed below:

|  |  |  |
| --- | --- | --- |
| **Name** | **Type** | **Value** |
| Actual Deletion Period | integer | 40 |
| Allow CI Update | boolean | TRUE |
| BiosAssetTag | string |  |
| BiosDate | date number |  |
| BiosSerialNumber | string |  |
| BiosSource | string |  |
| BiosUuid | string | 32333536-3030-4753-4835-303457353257 |
| BiosVersion | string |  |
| CalculatedLocation | string |  |
| ChassisType | chassistype\_enum |  |
| Connection State | string | connected |
| Create Time | date number | 10/26/2017 13:15 |
| Created By | string | UCMDBDiscovery: VMware VirtualCenter Topology by VIM |
| DefaultGatewayIpAddress | string |  |
| DefaultGatewayIpAddressType | ip\_address\_type\_enum | IPv4 |
| Deletion Candidate Period | integer | 20 |
| Description | string |  |
| DiscoveredContact | string |  |
| DiscoveredDescription | string |  |
| DiscoveredLocation | string |  |
| DiscoveredModel | string | ProLiant DL380p Gen8 |
| DiscoveredOsName | string | vmnix-x86 |
| DiscoveredOsVendor | string | VMware, Inc. |
| DiscoveredOsVersion | string | 6.0.0 |
| DiscoveredVendor | string | HP |
| Display Label | string | audiobase1 |
| DnsServers | list of strings |  |
| DomainName | string |  |
| EMS Name | string |  |
| EMS TYPE | string |  |
| Enable Aging | boolean | TRUE |
| Environment | string |  |
| ExtendedNodeFamily | string | hp\_compaq\_proliant |
| ExtendedOsFamily | string |  |
| Global Id | string | e165aa26ec1ae05e3f0eea708e61893a |
| Interface | integer |  |
| Is Candidate For Deletion | boolean | FALSE |
| Last Access Time | date number | 7/2/2020 17:19 |
| LastModifiedTime | date number | 2/13/2018 17:56 |
| MemorySize | integer | 131037 |
| Monitored By | list of strings |  |
| Name | string | audiobase1 |
| NetBiosName | string |  |
| Node Boot Time | date number |  |
| Node Is Complete | boolean | TRUE |
| Node Is Route | boolean |  |
| Node Is Virtual | boolean | FALSE |
| Node Key | string | 32333536-3030-4753-4835-303457353257 |
| Node NNM UID | string |  |
| Node Operating System Installation type | string | vmware\_esx\_server |
| Node Operating System Release | string |  |
| Node Operating System accuracy | string |  |
| Node Server Type | string |  |
| Node is Desktop | boolean |  |
| NodeFamily | string |  |
| NodeModel | string | hp\_proliant\_dl380p\_gen8 |
| NodeRole | list of strings | server |
| Note | string |  |
| OS Architecture | OS Architecture |  |
| Origin | string |  |
| OsDescription | string |  |
| OsFamily | OsFamily | baremetal\_hypervisor |
| OsVendor | string |  |
| PAE Enabled | boolean |  |
| Power State | string | poweredOn |
| PrimaryDnsName | string | audiobase1 |
| PrimaryIPAddress | string | 10.58.41.216 |
| PrimaryMACAddress | string |  |
| ProcessorFamily | ProcessorFamily |  |
| SerialNumber | string | SGH504W52W |
| SnmpSysName | string |  |
| SwapMemorySize | integer |  |
| SysObjecttId | string |  |
| UdUniqueId | string |  |
| Updated By | string | UCMDBDiscovery: VMware VirtualCenter Topology by VIM |
| User Label | string |  |
| Vendor | string | hewlett\_packard\_co |
| classification | classification\_enum | virtualization\_infrastructure |
| layer | layer\_enum | virtualization\_infrastructure |

We have to convert the same into JSON.

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