Kuwaiba in Detail

An Open-Source, Enterprise-Grade Network Inventory System

NEOTROPIC

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An Open-Source, Enterprise-Grade Network Inventory System

Why Choose Kuwaiba?

Kuwaiba is the first and only open source inventory system focused on telecommunications infrastructure.

Kuwaiba is able to manage hundreds of thousands of elements and support a high transactional load while ensuring the data availability, integrity and confidentiality.

Kuwaiba provides an extensive and flexible set of interfaces that makes integration and modeling easier than ever.

Kuwaiba is significantly more cost-effective than any comparable solution in the market.

Commercial Support

Neotropic provides consultancy, customization, setup, deployment and integration, platform administration, around-the-clock support and training services.

No Hidden Fees

Neotropic is totally transparent in terms of costs. Know from the beggining of the project how much it's going to cost you. No more expensive consultants, integration fees or costly support contract renewals. With Kuwaiba, you always stay on budget.

Not sure if Kuwaiba fits your needs?

Just download and use it! At kuwaiba.org you will find full-featured versions and virtual machines ready to use.
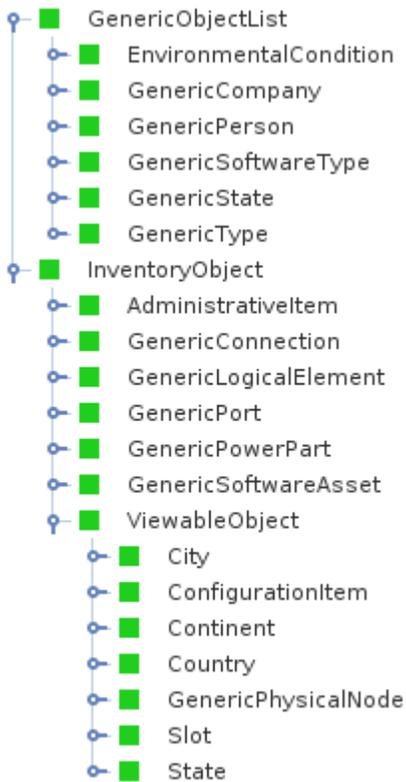
Smart Architecture and High Scalability

Kuwaiba sees an inventory system as a living entity, not growing only in terms of size, but also in structure and intelligence. Business requirements change constantly and therefore, the application must be ready to adapt to new scenarios. One of the key concepts that can help you unlock the potential of Kuwaiba is the data model. It provides a simplified representation of the network and the business from an operational point of view. It can be seen as the skeleton that supports the application, but a skeleton from which you can add, remove and change elements as you go.

Customize or Extend your Data Model

One of the key features of Kuwaiba is that it is completely object-oriented. It means that every business (Router, City, Port) and application (users, types) element is represented by an Object in the application and these objects are in turn product of an reality abstraction called Class. Likewise, every attribute is a Field in a Class. The set of classes, attributes and relationships between them is called *data model*. There's a default data model, but you can customize it depending on your needs by adding, removing and modifying classes.
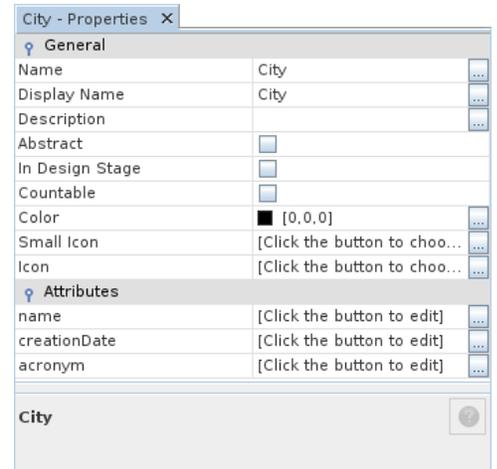
Explore and Share your Data Model

Navigate, review and modify your data model using graphical tools and migrate it from your staging servers to production in only a few steps.
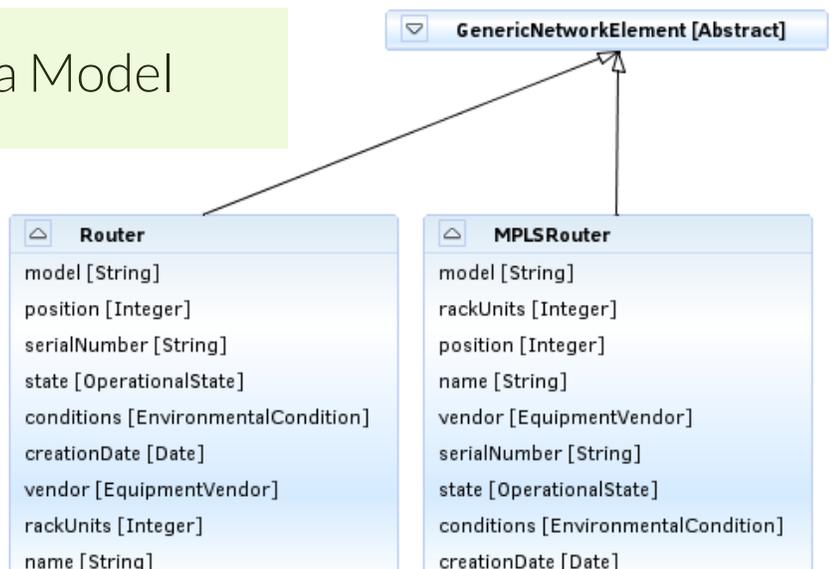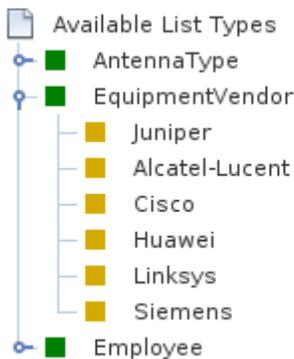
Define Your Containment Hierarchy

Another key concept in Kuwaiba is Containment. You can easily define what kind of objects can be created within others. For example, a Country can be inside a Continent, but can't be inside a Rack. A Port is usually within a Board, and not inside a City. These business rules can be defined using the Containment Manager.
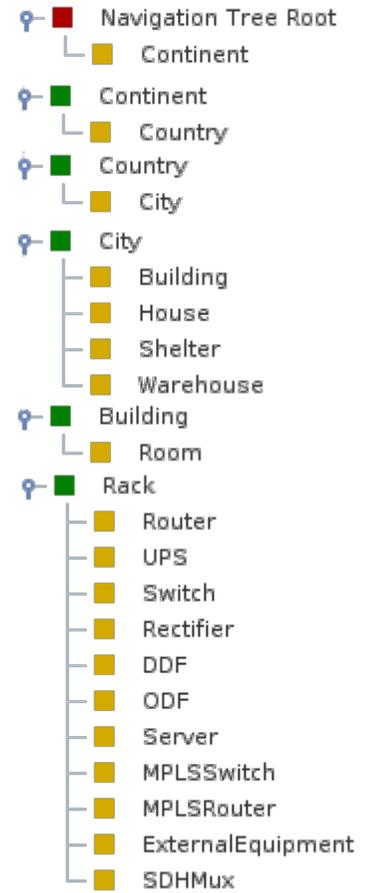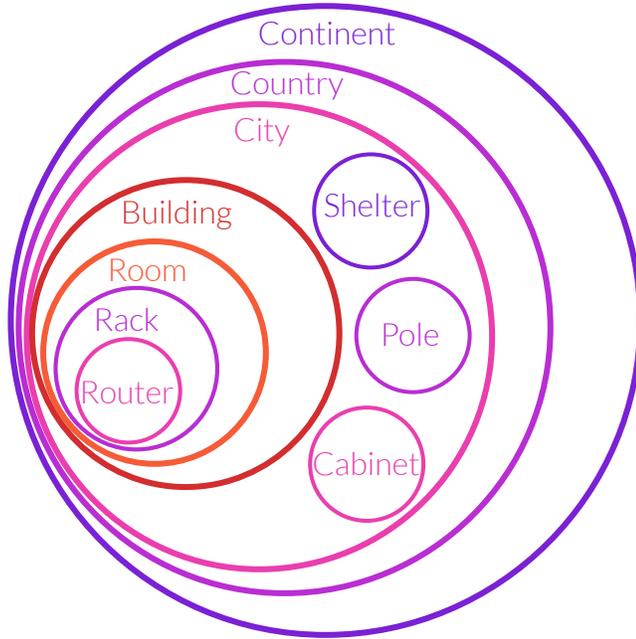
List Type Manager

Most of the attributes are primitive types (String, Integer, Booleans, etc), however, there are some more complex that point to another object in the database. This is the case of attributes such as *vendor*, which points to an object holding the information about the vendor of that equipment (technical contacts, account manager, etc) or *state*, that refers to the current operational state of the equipment (working, not working, decommissioned, etc). Many objects in the database will have the same vendor, and many other will have the same state. You can see them as many-to-one relationships.

Template Manager

In many scenarios there are some containment structures that are created on a regular basis, for example, all routers or switches of certain model: The vendor, number of rack units, slots, etc will be always the same.

Creating them from scratch every time is a tedious task. For this reason, Kuwaiba provides a module that allows you to create template of objects which actual inventory elements can be created from.
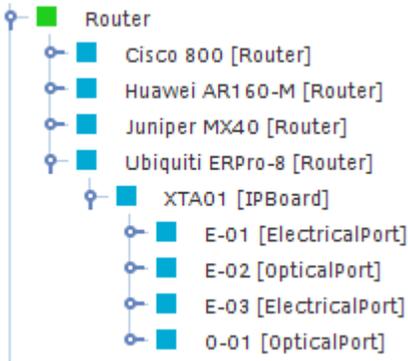
Navigation Tree

This module presents in a tree fashion the physical objects of your inventory organized according to the containment hierarchy defined. The Properties window will display the attributes of the selected object. These attributes match the visible attributes defined in the Data Model.
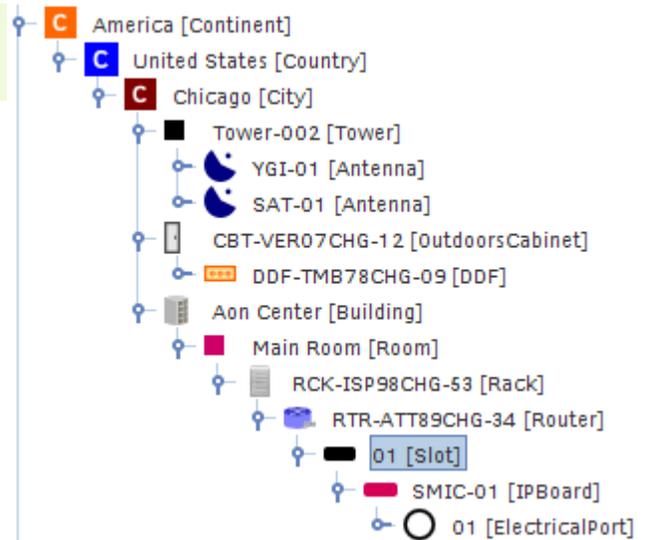
R4-BRCR-9001 [Router] - Properties ✕	
⚬ General	
name	R4-BRCR-9001
conditions	Indoors
vendor	Cisco
creationDate	April 12, 2017
rackUnits	2
serialNumber	ASR-RK10092881
state	working

Audit Trail

Kuwaiba is capable of tracking the changes performed by the users in the database for audit purposes.

Timestamp	Type	User	▽ Property	Old ...	New value		Notes
Tue Jul 26 01:43:36 COT 2016	Update Application Object	admin	name		Cisco	1395	
Tue Jul 26 01:44:40 COT 2016	Update Application Object	admin	name		Quest Manufacturing	1397	
Tue Jul 26 01:47:55 COT 2016	Update Application Object	admin	name		Phasing Out	1403	
Tue Jul 26 01:49:56 COT 2016	Update Application Object	admin	name		Data Center Level	1405	
Tue Jul 26 23:40:46 COT 2016	Update Application Object	admin	name		CAT-5	1425	
Wed Jul 27 01:16:30 COT 2016	Update Application Object	admin	name		Pipe	1506	
Wed Jul 27 16:50:42 COT 2016	Update Application Object	admin	name		Huawei	1488	
Wed Jul 27 16:51:05 COT 2016	Update Application Object	admin	name		My Own List Type 1	1490	
Wed Jul 27 16:51:16 COT 2016	Update Application Object	admin	name		My Own List Type 2	1492	
Wed Jul 27 00:53:04 COT 2016	View Update	admin	structure background				
Wed Jul 27 01:29:58 COT 2016	View Update	admin	structure background				
Wed Jul 27 01:31:51 COT 2016	View Update	admin	structure background				
Wed Jul 27 00:19:56 COT 2016	View Update	admin	structure				

Physical View

A view is a graphical representation of an object. There are many types of views, because diferent objects in the inventory can have diferent perspectives, for example:
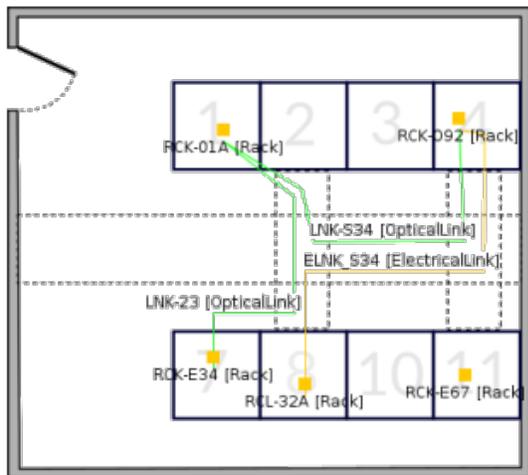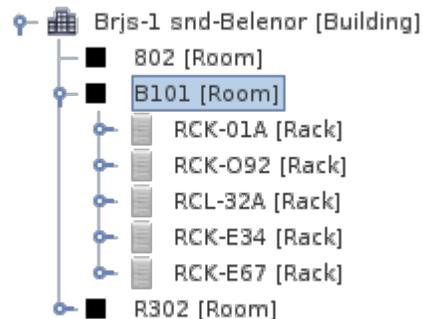

Rack Views
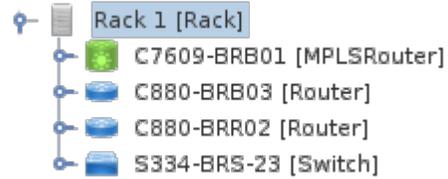
In the Physical View, you can move and connect the nodes, add a background and export the view. It is particularly useful at Room and City levels, because it will allow you to see how the children elements are located geographically (e.g. buildings) or in an enclosed space.

Object View

Physical Path

A nice feature in Kuwaiba is the ability to see the path of a physical connection as long as there is continuity.
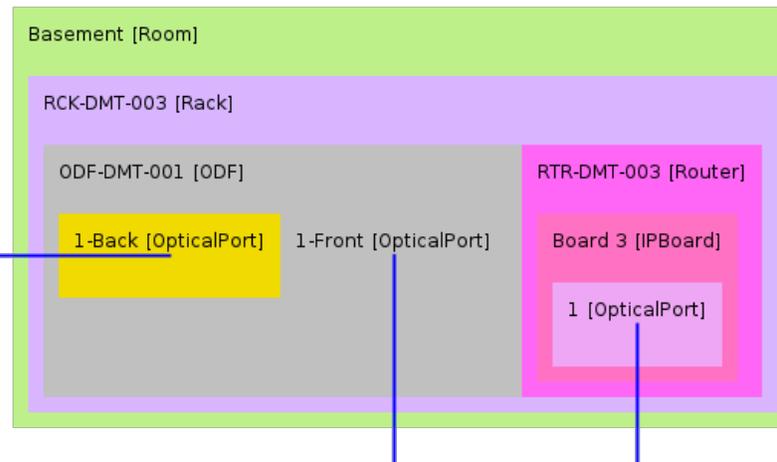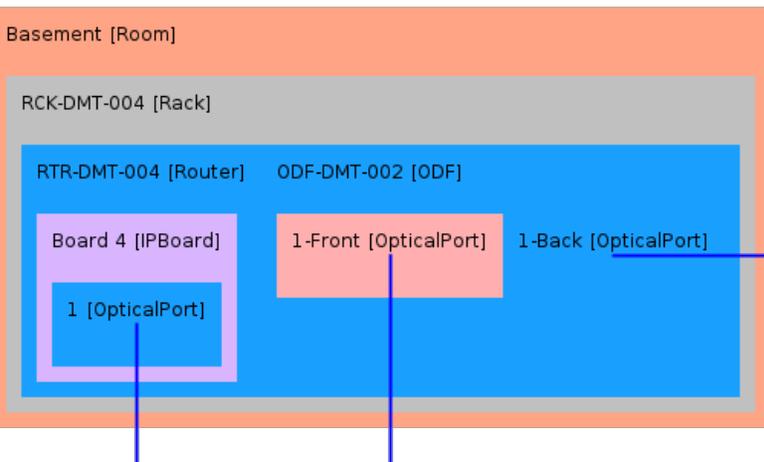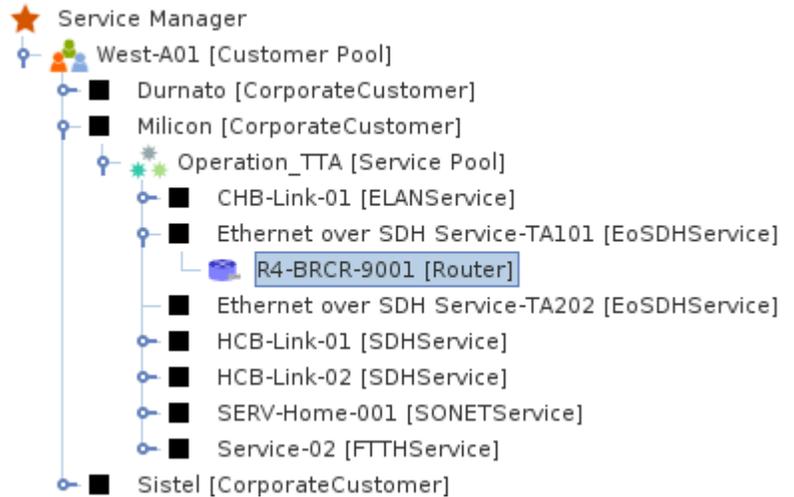
Search

Service-02 [FTTHService]
CHB-Link-01 [ELANService]
SERV-Home-001 [SONETService]
Ethernet over SDH Service-TA101 [EoSDHService]
Ethernet over SDH Service-TA202 [EoSDHService]
HCB-Link-01 [SDHService]
HCB-Link-02 [SDHService]

Create Relationship   Close

Service Manager

The Service Manager allows you to easily organize and tag all your customers, the services associated to them and the resources in your inventory necessary to provide such services.

Service Manager
West-A01 [Customer Pool]
    Durnato [CorporateCustomer]
    Milicon [CorporateCustomer]
        Operation_TTA [Service Pool]
            CHB-Link-01 [ELANService]
            Ethernet over SDH Service-TA101 [EoSDHService]
                R4-BRCR-9001 [Router]
            Ethernet over SDH Service-TA202 [EoSDHService]
            HCB-Link-01 [SDHService]
            HCB-Link-02 [SDHService]
            SERV-Home-001 [SONETService]
            Service-02 [FTTHService]
    Sistel [CorporateCustomer]

Contract Manager

This module allows you to organize your contracts in pools and keep track of the expiration dates and service providers.

Contract Manager
    Operational Level Agreements [Contract Pool]
    Service Level Agreements [Contract Pool]
    Support Contracts [Contract Pool]
        Blade Servers [SupportContract]
        South Coast SDH Multiplexers [SupportContract]
        Workstations [SupportContract]
    Utilities & Others [Contract Pool]

Painless Integration and Customization

Thanks to its open source nature, no matter how your bussiness evolve, Kuwaiba offers you a full flexibility to integrate it with other applications such as fault management systems, CRMs, ERPs, SOA ESBs or EMS/NMS. Kuwaiba can be easily taylored to different domains: no matter if you are a mobile operator, a satellite communications provider, an ISP, an infrastructure contractor or just a company with a large IT infrastructure.

South Coast SDH Multiplexers [SupportContract] - Prope...

General

creationDate	July 28, 2016
expirationDate	November 28, 2016
serviceProvider	UniSyx
description	Maintenance contracts for SDH multiple...
startDate	May 27, 2016
name	South May ... 2016

|	Sun	Mon	Tue	Wed	Thu	Fri	Sat
19	1	2	3	4	5	6	7
20	8	9	10	11	12	13	14
21	15	16	17	18	19	20	21
22	22	23	24	25	26	27	28
23	29	30	31				

SDH Networks

This module allows to create end-to-end virtual circuits and all logical entities required by the SDH protocol relevant to the inventory.
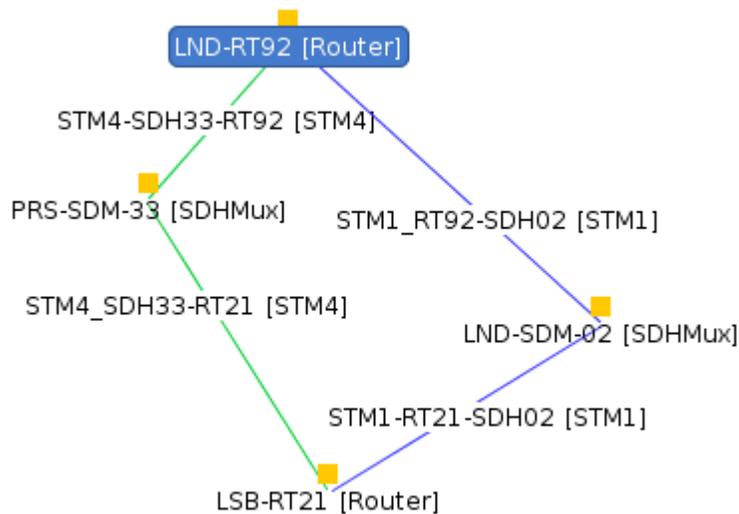
Physical Connections

The Physical Connections toolkit is tightly integrated to the Physical View module. With Kuwaiba you can create physical layer connections using cables, fiber optics or radio links very easily, navigate through the connections and inspect the resources in use.
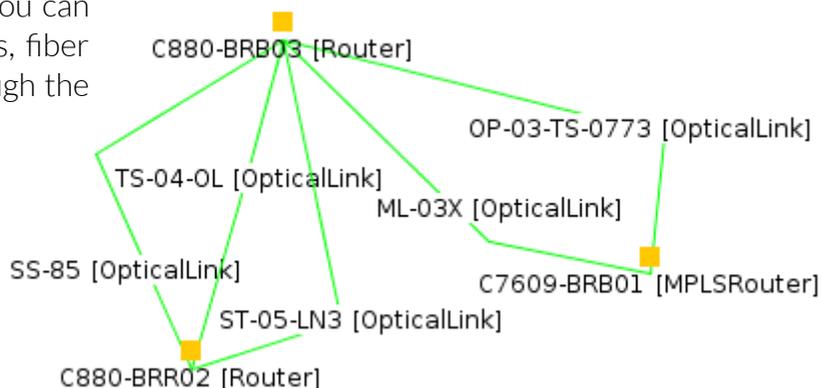
Relationship Explorer

The Relationship Explorer allows you to transparently navigate through the relationships between objects in the inventory. With this module, you can easily jump from ports to VLANs to services and then to SLAs in a single window
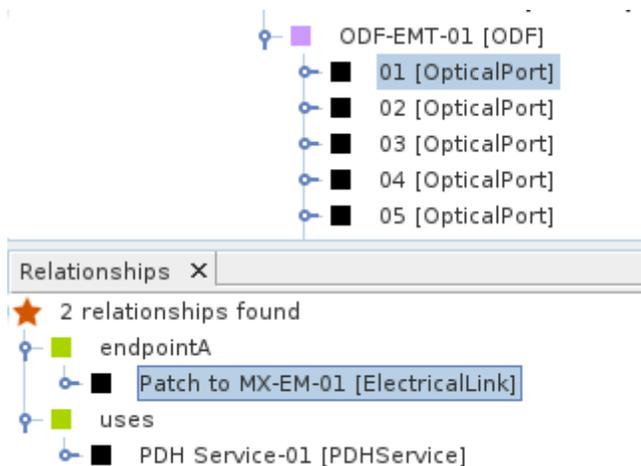
IP Address Manager

Manage your IPv4/IPv6-related assets, such as subnets and IP addresses. Integrate other assets like VPNs, VLANs, physical and virtual interfaces, condiguration elements like ACLs, routing policies, etc.

Reports

Subnet Usage

● Used
● Free

95.2%

Free
59 (95.2%)
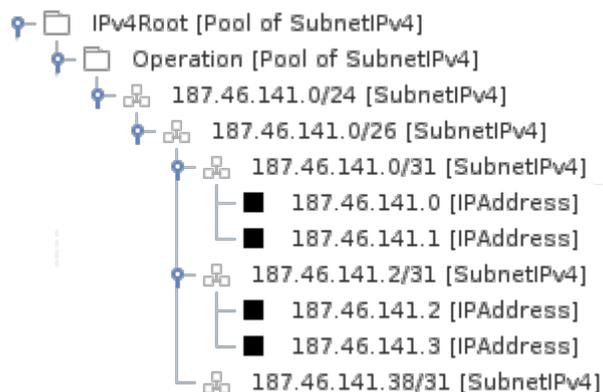
Build rich reports using *Groovy* scripts and the extensive reporting API provided by Kuwaiba.

There are reports tied to instances of a particular class. An example is "Rack Usage". All instances of class Rack will have this report available when right-clicking on them.

There are also general purpose reports, not related to particular objects in the inventory. For example, "All support contracts about to expire" or "All inventory objects whose operational state is Defective". You can also define custom parameters for this kind of reports.

○ Class Level Reports
  ○ Rack
    └ Rack Usage
  ○ AC-Power-Supply
○ Inventory Level Reports
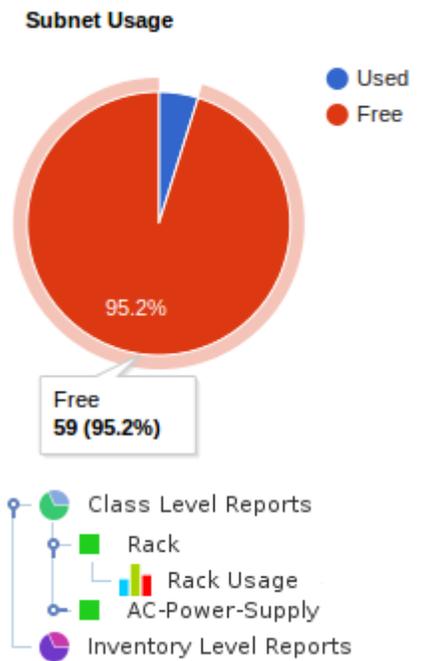
Name	RCK-TMB07WA-01
Serial Number	834-312-09
Location	Room A [Room] | Building A [Building] | Washington [City] | USA [Country]
Total Rack Units	20
Used Rack Units	15
Use Percentage	75.0%

Name	Serial Number	Rack Units	Operational State
ODF-TMB10FL-01 [ODF]	673-421-11	2	Defective
ODF-TEL01NY-20 [ODF]	285-481-23	3	Working
ODF-ISP55TX-10 [ODF]	934-892-37	3	Decommissioned

Task Manager

The Task Manager is a complete automation and notification solution. You can create tasks and scripts and schedule their execution or link them to widgets that will be displayed in the Dashboard of the client application.

★ Available Tasks
├ ▪ Contract Expiration
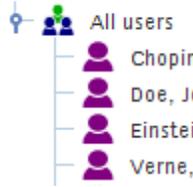└ ▪ Rack Usage

Rack Usage

● The rack RCK-VER07AZ-01 with serial number <NOT SET> and id 13314 has a 100% occupation

● The rack RCK-ATT07MI-01 with serial number 542-789-12 and id 13296 has a 100% occupation

● The rack RCK-TMB07WA-01 with serial number 834-312-09 and id 11642 has a 75% occupation

User Management

Define users and groups and assign fine-grained privileges.

Software Asset Manager

With Kuwaiba is possible create software licenses and associate them to existing elements or to keep them in a temporary location until they are actually used.

Bulk Upload

Kuwaiba provides a module to import objects and list types from CSV text files with a format easy to build either programmatically or using a spreadsheet.



```
Country~t~root~t~name~c~root~t~name~c~United States~t~acronym~c~US
Building~t~Country~t~name~c~United States~t~name~c~Empire State~t~owner~c~John Doe
Router~t~Building~t~name~c~Empire State~t~serialNumber~c~123456
Building~t~Country~t~name~c~United States~t~name~c~One World Trade Center~t~owner~c~George Aldrin
```

Graphical Query Editor

Easily create and save queries with Kuwaiba's innovative query editor
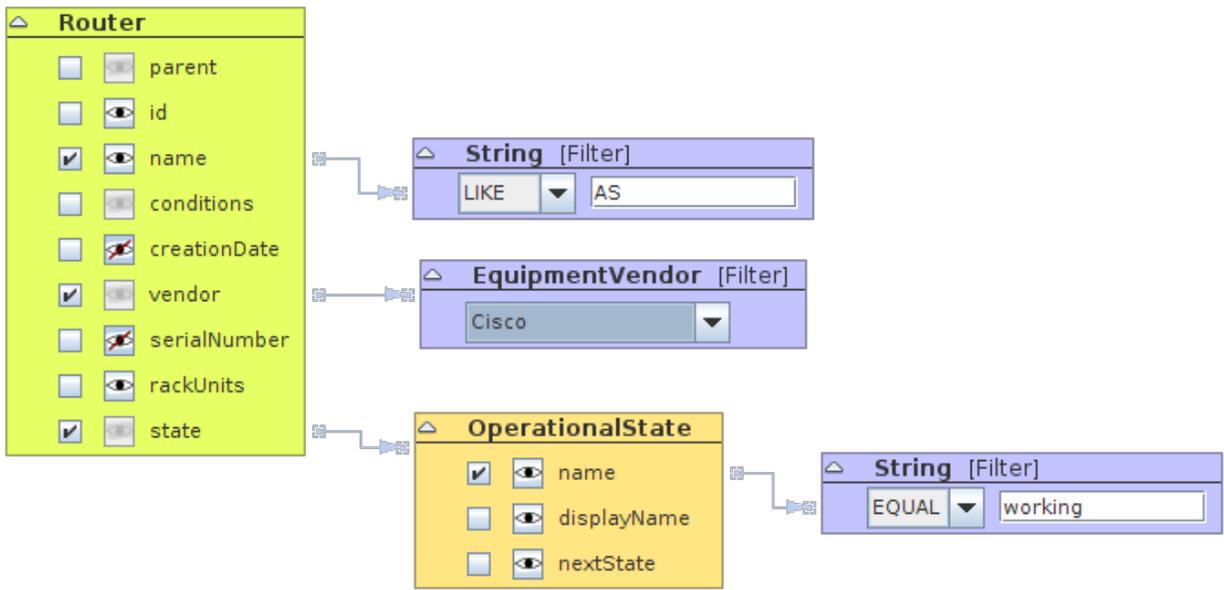
A New Way to Store Your Data

Kuwaiba uses a graph database[1] to store your data. This allows the application to transparently store the elements of your network, which is a graph itself. It's natural for Kuwaiba to find routes, paths and perform multi-directional searches.

Topology Designer

You don't need MS Power Point[TM] or costly CAD applications to do high-level design and document your network anymore. With the Topology Designer keep everything in one place.
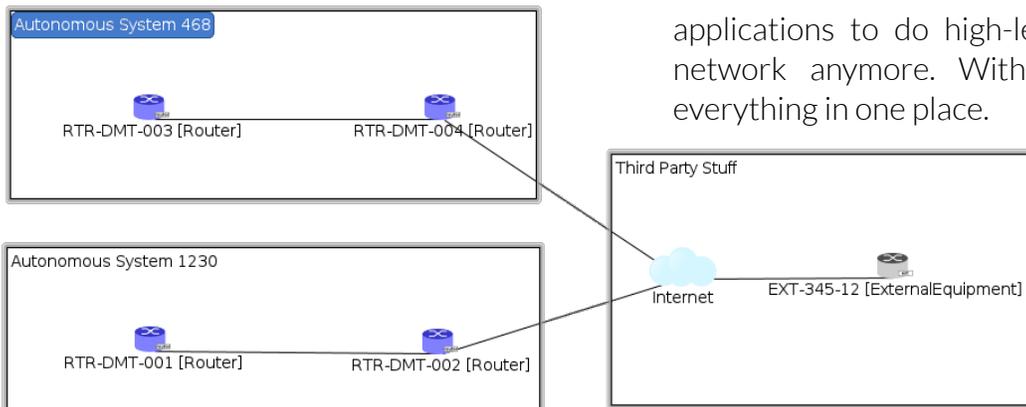
[1]Graph databases on Wikipedia: https://en.wikipedia.org/wiki/Graph_database

For more information about Kuwaiba

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