

# Asset System

## The Asset System

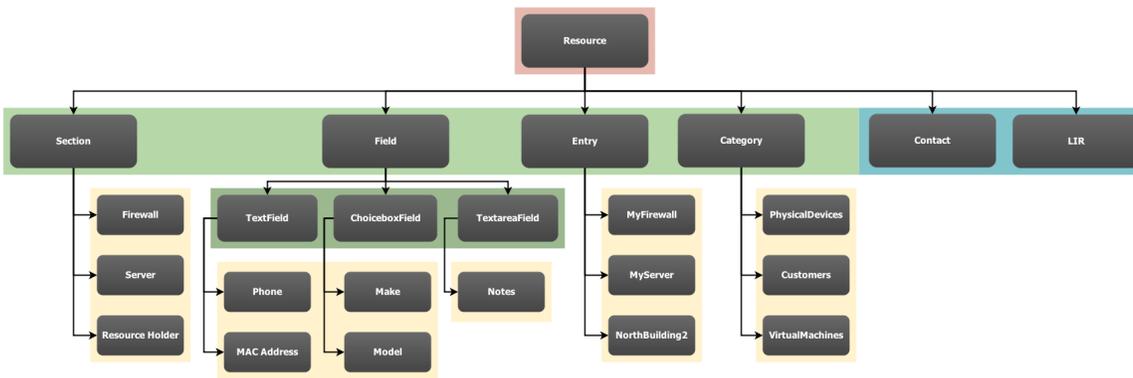
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## Prerequisites

Some knowledge of object oriented programming (OOP) is recommended to understand the following description of the Asset System. If you are unfamiliar with OOP concepts, I would recommend reading a tutorial such as this one (<http://docs.oracle.com/javase/tutorial/java/concepts/index.html>) provided by Oracle or this one ([http://msdn.microsoft.com/en-us/library/ca22fyhc\(v=vs.90\).aspx](http://msdn.microsoft.com/en-us/library/ca22fyhc(v=vs.90).aspx)) provided by Microsoft, to help you understand terms like class, object, instantiate, property, method, and others.

## Overview

The asset system is a content management system (CMS) that is built as an extension to the resource system. It's the main use of the resource system, and to many, the terms "asset system" and "resource system" can seem synonymous. In the diagram below, the Resource class is at the top in red. The child-classes that make up the asset system are in green. Yellow is used for examples of objects (not classes) that could/would have been instantiated from their Class. And the items in blue are examples of resource child-classes (resource types) that exist outside of the asset system.



## Introduction

When writing software, the developer creates classes. A class is like a blueprint for objects. The class defines the properties and methods that the future objects will have, and like blueprints, multiple objects can be created from a single class. The Resource Class is a class, and each resource "type" (e.g. Section, Field, Contact, ect.) has a class, something which has been written in core code and cannot be changed by the user. The purpose of the asset system is to reproduce this fundamental low-level class-object system in such a way that the user can create their own classes, properties, methods, and objects without needing to dive into the code.

## Components

## Section

Sections are like classes, they are the templates/blueprints of the asset system. To create the structure of the blueprint, the user assigns fields (i.e. properties) and sometimes gadgets (i.e. methods) to the section.

## Entry

Entries are the objects of the asset system. An entry cannot be created without a section to use as its blueprint. Creating an entry from a section is like instantiating an object from a class.

## Field

Fields are the properties of the class. Field has its own child-classes; this is to accommodate the different types of fields. For example, when creating a class *Car*, the developer might give the *Car* class the property *String color*. In a similar fashion, a user of the Asset System could create a Section called *Truck*, a TextField called *color*, and then assign that textfield to the section. When the user goes to create an entry from the section *Truck*, they'll be given the option to include a text value for the field *color*.

Fields also have a use beyond acting as properties for classes. The field object (in this case *color*) is a resource object in its own right. This means it can be modified independently of the sections that have assigned it and the entries that are using it. For example, a field which shows a dropdown box of several options could be modified to include more options; any entry which is using that field would automatically receive those new changes. Or consider a simple textfield object called "MAC Address" that is used by several sections and entries. If that field was modified to include a filter that checks the input for a valid MAC string, any entry using that field would get those improved validation checks.

Also, because the same field object can be assigned to multiple sections, it's easier to find entries by their values because they're all using the exact same field object. The alternative would have to be a blind text search to try and find different objects but with contextually similar values, and that method is notoriously unreliable. **This is why it's encouraged to assign the same field object to different sections as opposed to just making new fields each time.**

Fields are like what you might call class properties or class variables, but they've also got a lot more functionality available for when you need it.

## Category

Categories are just an organizational tool. There is a clearly defined relationship between Sections, Entries, and Fields, but Categories exist on their own. If you look on the [Classes page](#), you'll see that every Resource has the same 6 fundamental properties and 3 of them are ID values. The first is the ID that belongs to the resource itself, the second is the ID of the resource's parent, and the third is the ID of the Category that the resource belongs to (if any). There isn't a strict hierarchy here, how you use categories is entirely up to you. You can create categories, child categories, and carefully plan exactly how you want the resources in your system to be organized. Or you can ignore the whole thing completely and just let every resource have the default category of "uncategorized." Many users find that the ability to create hierarchical parent-child relationships with entries, and then filter down results even further by Section, leaves the use of Categories unnecessary. But if you want to use them, it's there.

## Gadgets

Gadgets are not resources, which is why they're not included in the chart at the top of the page. Gadgets are self-contained applications and are limited to only using HTML, CSS, and JavaScript. All they know about the page that they're loaded on is the ID of the resource. However, because gadgets can interact with the API via JavaScript/AJAX, they're the perfect way to add new features to the asset system in a maintainable and modular way. At its core, the asset system just allows users to create entries and then modify their text-based attributes through a simple form. The ability for gadgets (such as the IPAM-Gadget) to interact with the API, is what makes the asset system so powerful.

Currently, the only gadgets that can be assigned to sections are gadgets that have been created by 6Connect. However our API is robust enough that almost anything you can do through ProVision could be recreated in the form of an isolated gadget. And because they're just made from HTML and JavaScript, it shouldn't be too strenuous for anyone to write a gadget of their own. If you want to create your own gadgets, it would be recommended to email us first with an outline of what you're trying to do. Then the recommended procedure would be to first create it as a standalone HTML/JavaScript webpage that connects to our API (you may need to disable cross-domain request security in your browser to make the AJAX connections work). Once you have your standalone page working, the process to turn that into an embeddable gadget is trivial.

Note: Gadgets are initialized as AngularJS applications. Both the AngularJS and jQuery libraries will be loaded on the page and available to use, but it is highly recommended to make the entire gadget in the form of an AngularJS app. But as noted above, it's best to contact us first so we can help you in the right direction.