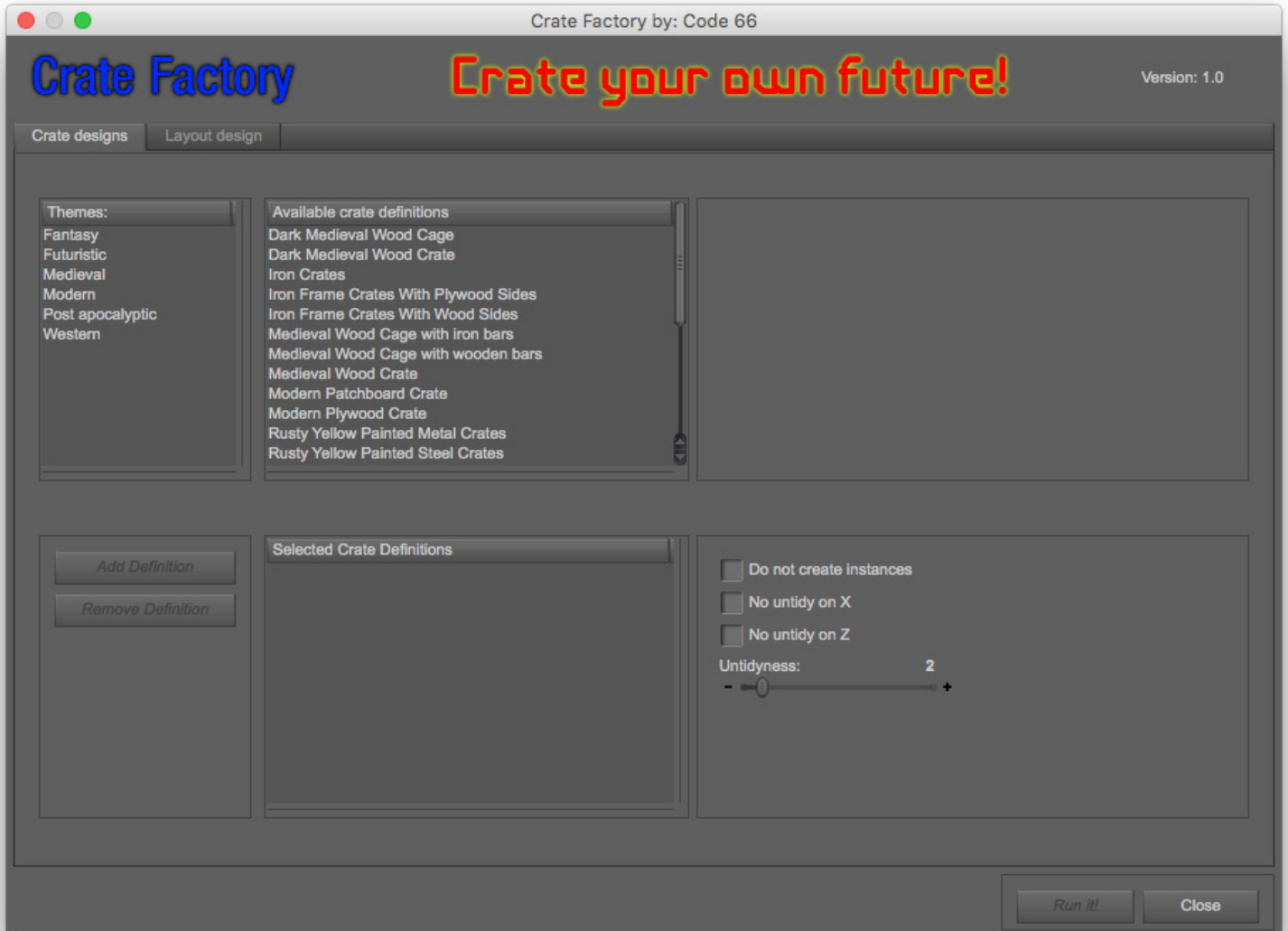# Crate Factory

User Manual

This manual is for the **Crate Factory** script and will teach you how to setup, configure and build useful render fillers of crate rows or clusters with many different types of crates in them. Below is what you see when you run the script.

The functionality is similar in many aspects to the **Single Crate Creator** script, so to get a basic understanding of the functionality, it's recommended to look at the **Single Crate Creator Manual** first, before diving into this, at this manual will assume that you already are familiar with some of the basic concepts like crate descriptions and the crate options.

How this works - Crate Designs Tab

To load a crate definition from the available definitions list to the Selected Crate Definitions list, simply double click it. If you just select it, the definition information will show up to the right of the available definitions list. The filters works the same way as in the Single Crate Creator, you can select one or many filters, or none to show all available definitions.

There are a few checkboxes here that can be of interest, and a slider. The checkboxes are:

Do not create instances: If this checkbox is checked, Craete Factory will not use instancing when filling out the distant crates, but use low detail crates instead.

No untidy on X / No untidy on Y: If either of these are checked, it will not untidy on that axis, this is good of you want your crates neatly stacked against a wall for example.

Untidyness: This slider sets the untidyness of the generated crate row or crate cluster. The higher the value the more untidy the result is.

Now it's, time to setup a crate factory design, what should we do? But of course, everyone want to make an Indiana Jones warehouse. So, we select Modern filter, and pick some of the modern crate designs. I show the information boxes for two of the here below.


Small Modern Plywood Crate
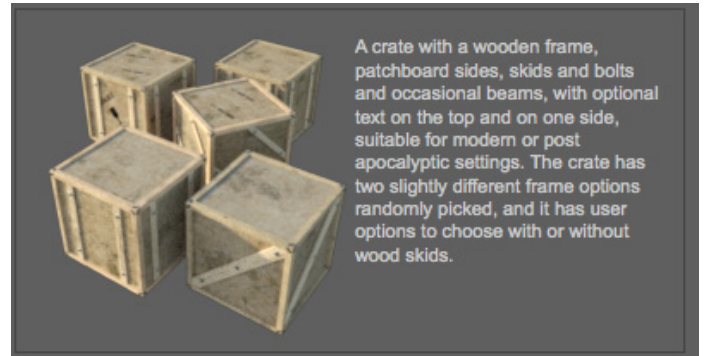

Modern Patchwood Crate

We add them, plus the **Small Modern Patchwood Crate**, **Modern Plywood Crate** and some Iron framed plywood and patchwood crates to the Selected Crate Definitions list, by double clicking them, or selecting them and clicking the **Add Definitions** button. You can now see that the items in the Selected Crate Definitions list has sub items, which are the Crate Options for each of the crate definitions. If a crate definition do not have any options, there will be an item there3 saying so. You can now fine tune the result by switching the options on or off for each of the crate definitions added. To remove a definition from the Selected Crate Definitions list, you simply select it and the button to the left of the list, titled **Remove Definition**, becomes enabled.
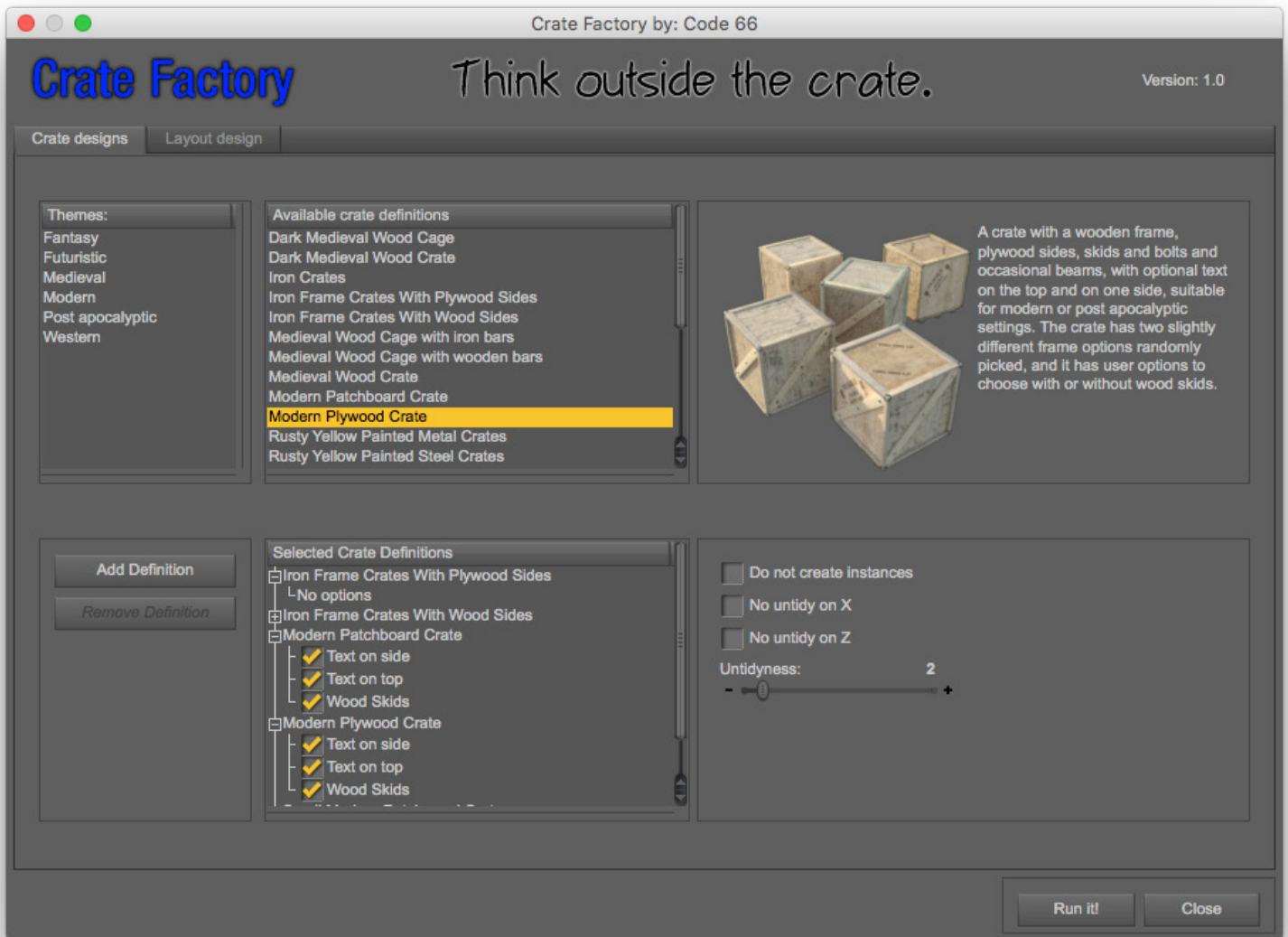
That was the first step of running the Crate Factory, we have now defined the possible population from which it will randomly generate the crates. We can fiddle with the Untidyness if we want to, but for this example we leave that as a homework.

So, have you so far understood the basic workflow so far? Add definitions, set the options, and now we can hit the **Run it!** - button and crates will be generated. But, we might want to go to the Layout design tab first, as we might want to have a layout that matches what we want to do.

Below is the Layout design tab, how it looks by default. To the left is the design preview, where you can see how the design will look, how the crates will be placed. The long bar below with four colour boxes tells you what the colours on the layout boxes means. Green is High resolution, for close ups. Yellow is medium, suitable for a little more distance from the camera. Red is low resolution, fillers, and blue is instances. Instances are always instantiated from low resolution crates, unless there are no low resolution crates, then it will be low resolution crates. The same is if you check the checkbox no Instances, but they will still be represented here as blue.
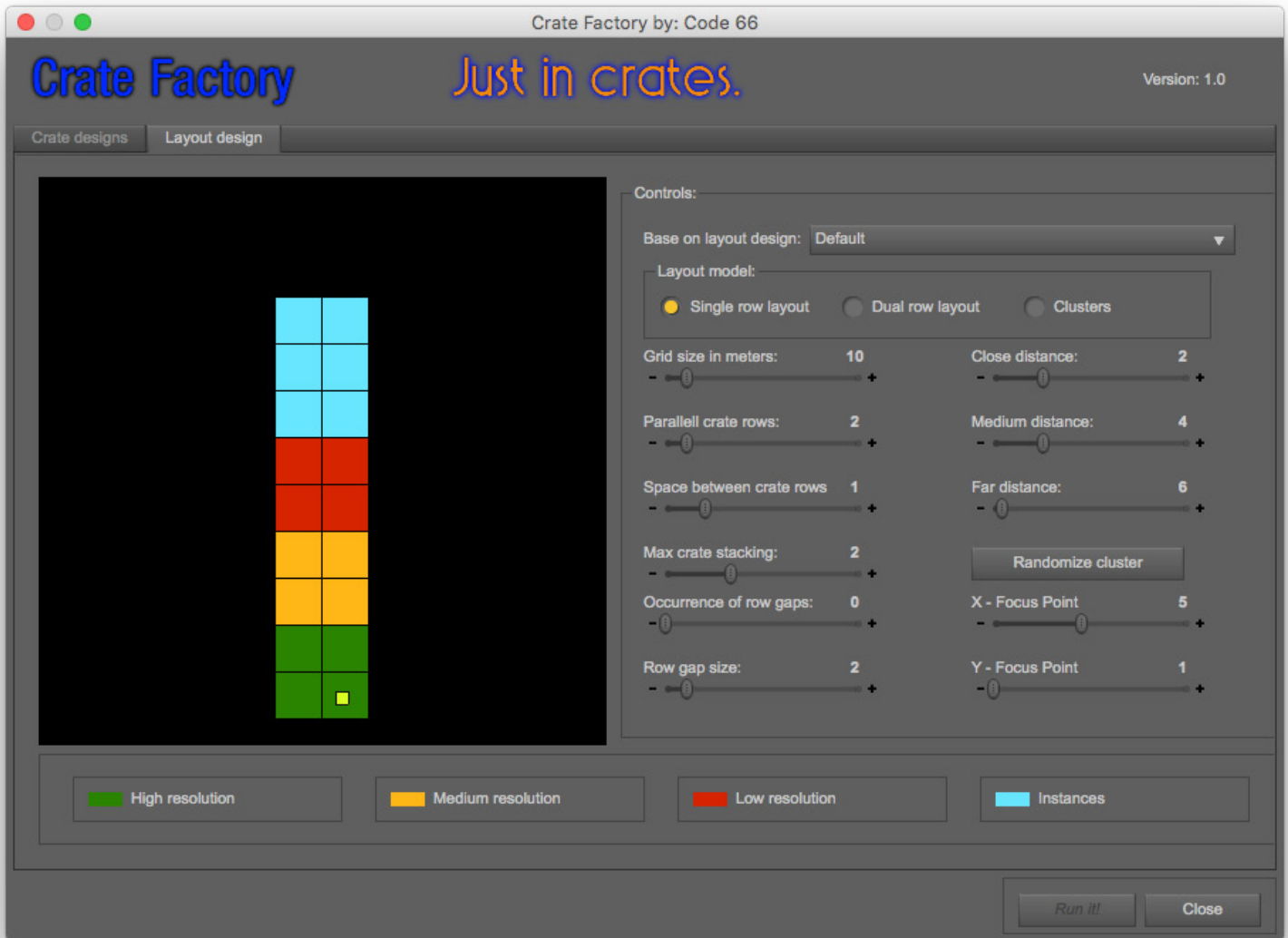

On the right side there are several controls to help you set up the layout. First a popup menu, the **Base on layout design,** which holds a few different preset layouts, in addition to the default one you see right now.. The different built in basic designs are a little different so they provide great starting points.

The first three are dual line rows with a distance between the two rows, and the last two are clusters, randomly placed piles of crates. Different setups have different uses. As we are making a two line warehouse crate design, we will start, fooled you there, with the Narrow line. This is because we can now learn how to change a default design into a design we really want.
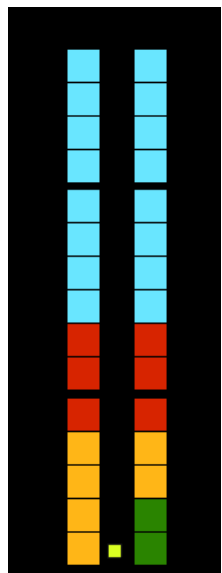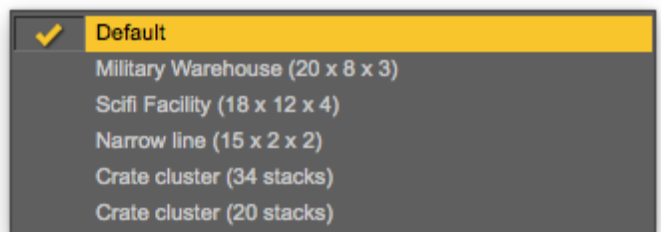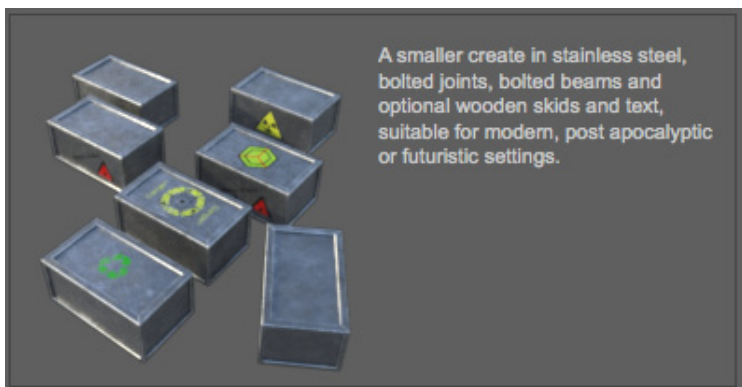

The narrow line design looks like this. Now you wonder, what controls which crates are Green, Yellow, Red or Blue? It's what's called the Focus points, and it's controlled by two sliders, the **X-Focus point** and the **Y-Focus point**. By moving the Focus point around, you tell Crate Factory where you will have the camera, the action, the figures, the focus of your scene, and Crate Factory handles the placing of creates. See it as a circle where the Focus point is the centre. You control how large the Green, Yellow and Red circle radius is with the sliders **Close Distance**, **Medium Distance** and **Far Distance**. Take note that making the High or Medium zones large will very much effect the overall performance and resource usage in DAZ Studio, so only use as much as you really need. And while we are at it, there under the popup menu are three radio buttons for the three basic designs, **Single row layout**, **Dual row layout** & **Clusters**. Each of these basic designs use their set of design controls.

We fiddle around with the controls a little until we find what we are looking for. One control that is easy to forget it the Mac Crate Stacking, it is by default set to too, except the Military Warehouse and SciFI Facility that has 3 and 4. The numbers after the name in the Base on layout design popup menu are Depth, Width and Height of the setup.
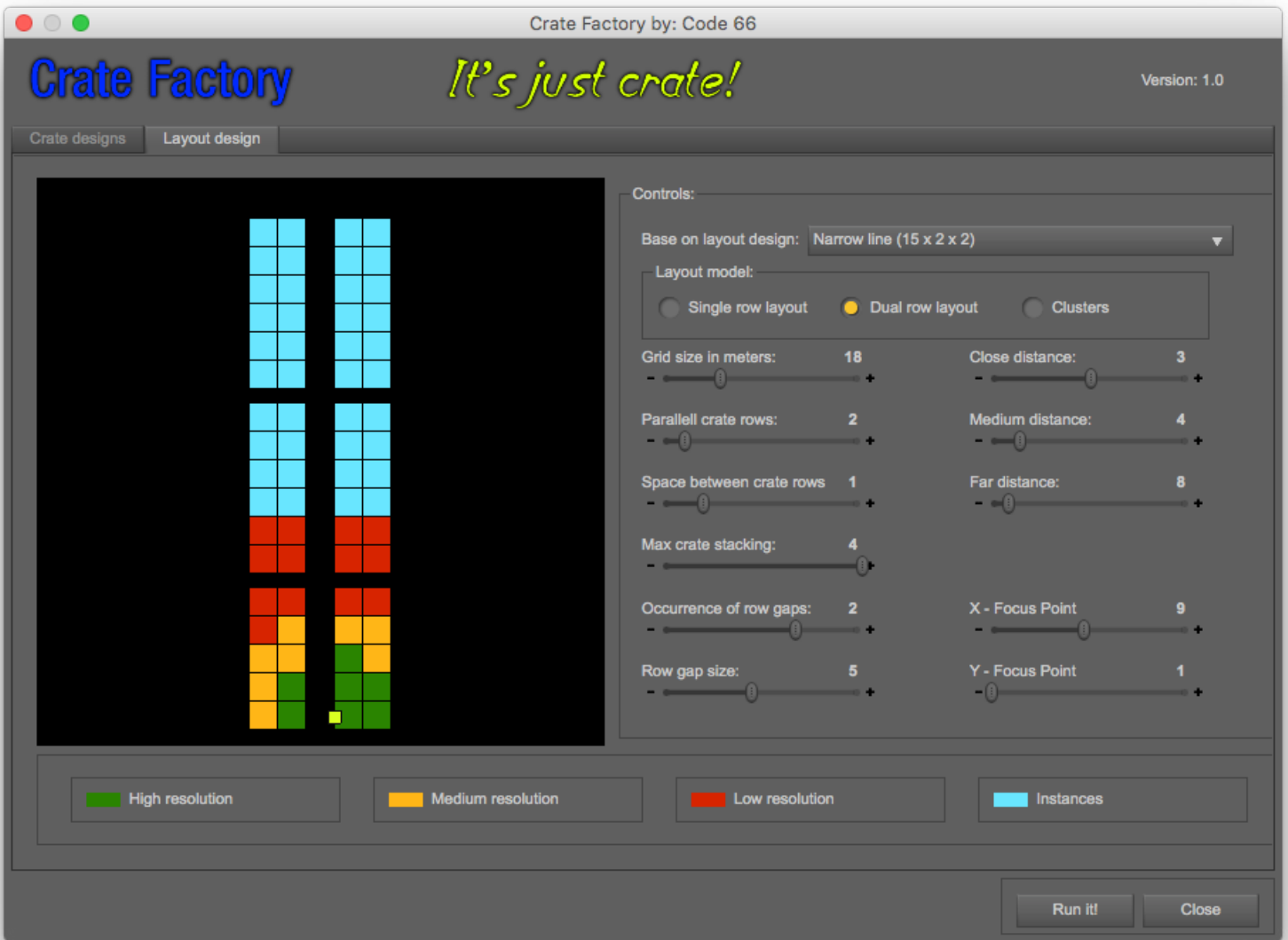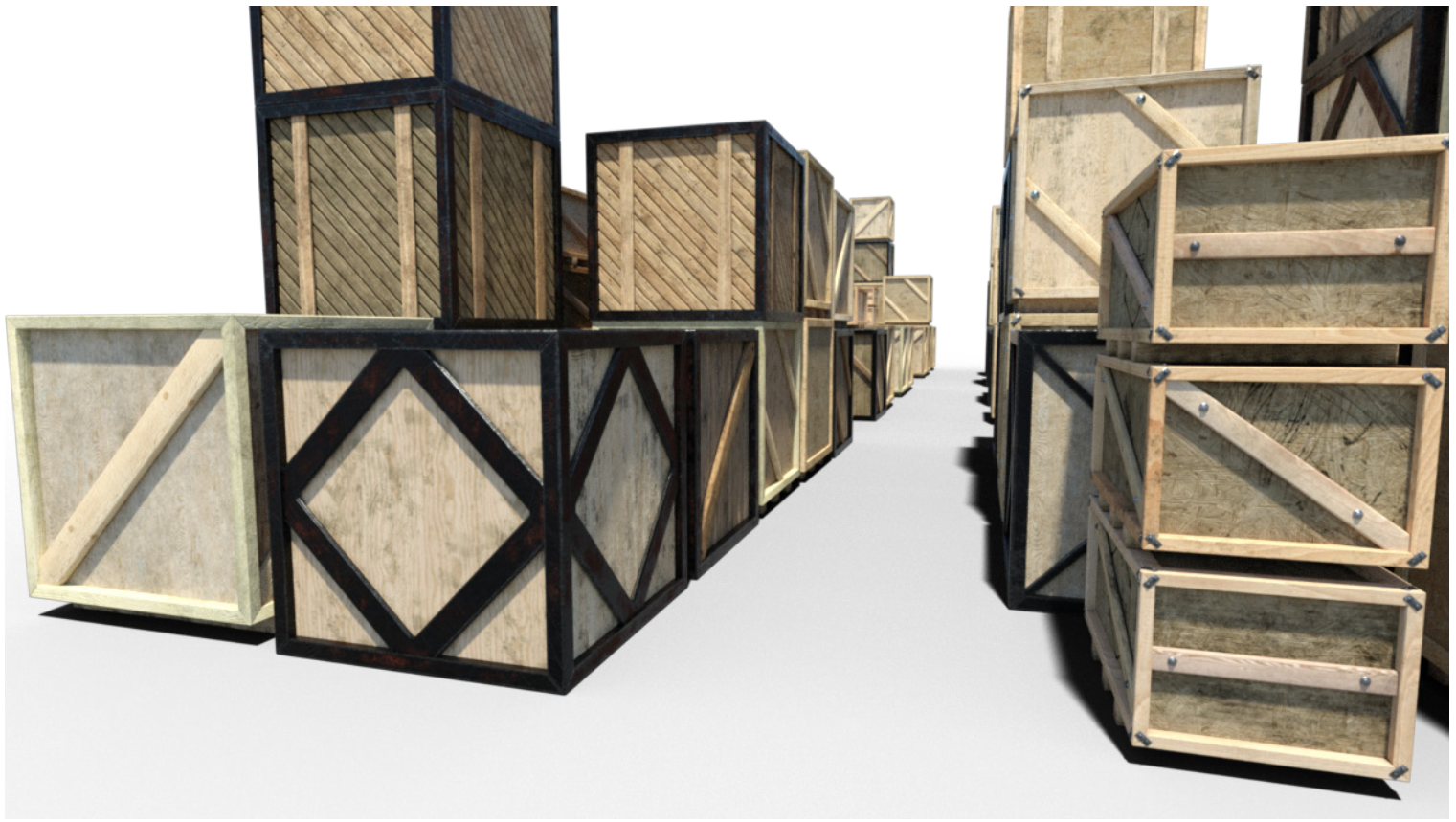

What you see here is a dual crate row layout, Grid Size set to 18, which means the maximum length of a row can be 18 m, which is about the same amount of crates, except that extra gaps will eat some of the available space. Speaking of gaps, **Occurrence of row gaps** and **Row gap size** controls the gaps.

We move the Focus point one the right side and set the sizes so a few crate stacks to the right will be high resolution crates. This is where we will put our camera. It's important not to have too many high resolution crates as they do weight down your system resources compared to the low res ones. And remember stacking, if you set stacking to four, each box in the feedback display here can be up to four crates. This scene here can be 28 high resolution crates and then 32 medium resolution crates. Now, it's time to generate the crates. Sit back and enjoy the ride.


A smaller create in stainless steel, bolted joints, bolted beams and optional wooden skids and text, suitable for modern, post apocalyptic or futuristic settings.

A yellow painted and rusty metal crate with optional beams, shock absorbing feet and an optional sign on one side and the top. It has a worn look and is suitable for modern, post apocalyptic or futuristic settings.

**Some of the definitions used in the next run we make.**

Just add Indy and you are good to go. As you can see, the closest crates, the small modern crates, have joints and beam bolts, while those from the yellow or red segments only have beams. That is what the different resolution levels do.

Now It's time to create a cluster I think, as those looks quite different to the one or two row layouts.
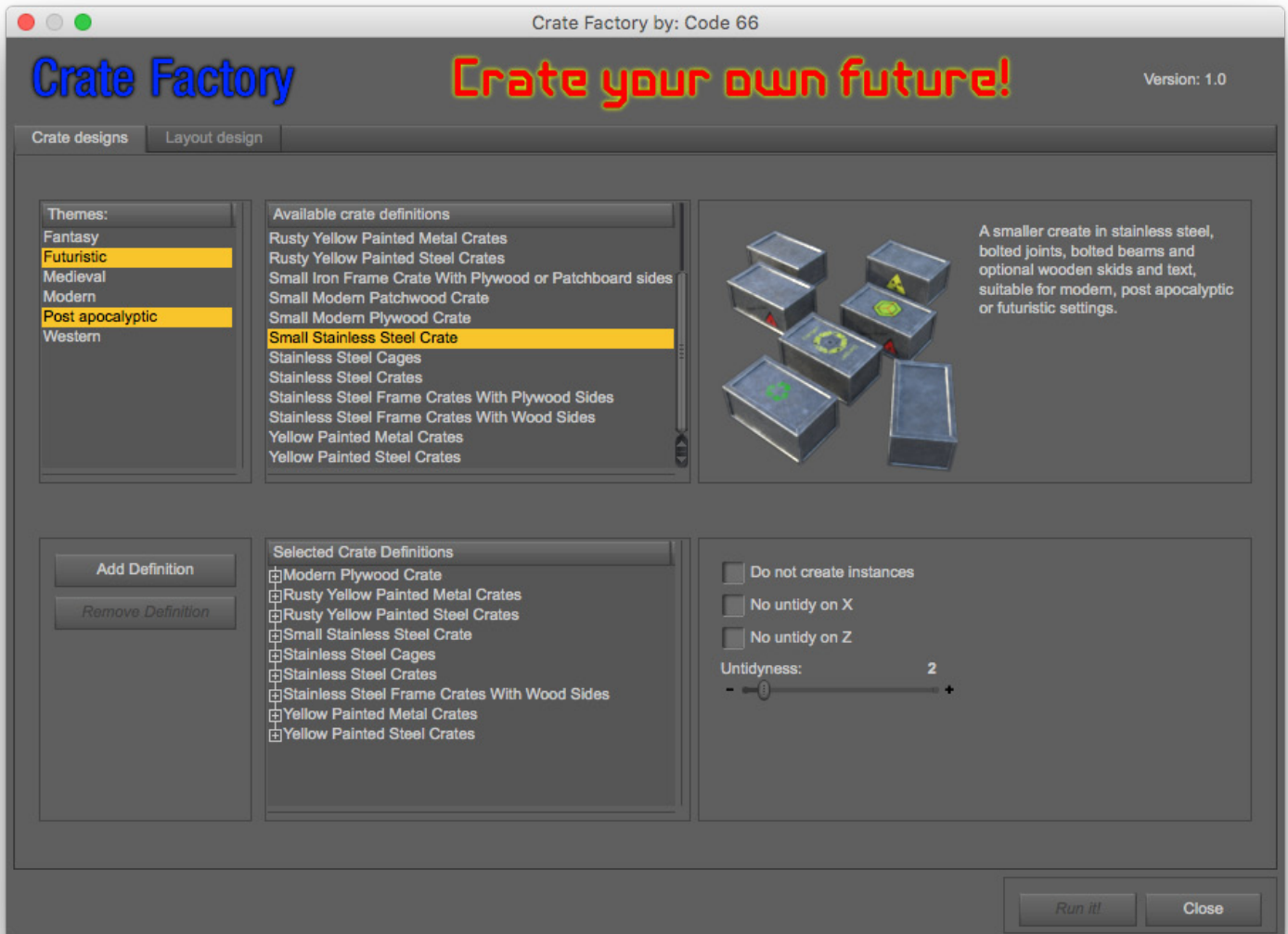
Now we go to the Layout design tab, and choose to base our design on **Crate cluster 20 stacks** base setting. As you see the layout is quite different as here the crates are randomly spread all over the area. To make a new random spread, click the **Randomize cluster** button. The number of stacks are part of the random, so if you get too many or too few, just randomize again. When your cluster looks the way you like it, just adjust the Focus point to the place in the place in the cluster you want closest to the camera. With small clusters there is really no problem to make most of it High or Medium resolution, but with large ones, as I said about large lines, your milage might vary when it comes to how many crates your system can take.
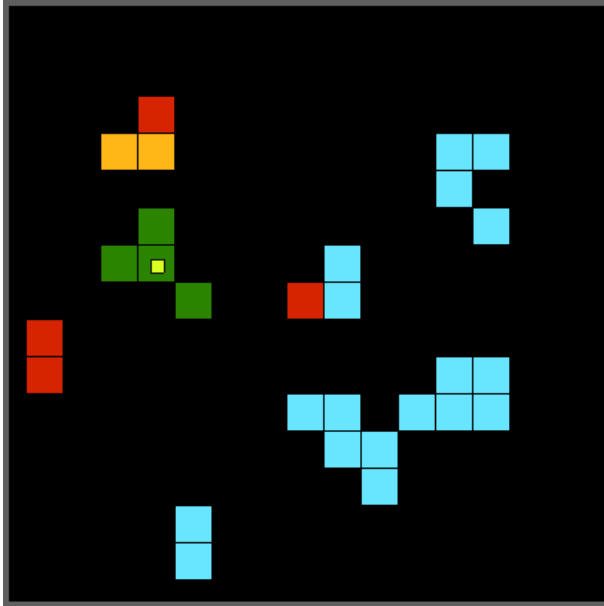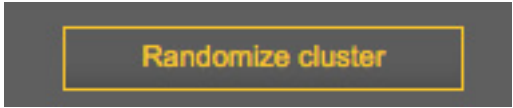
I setttled for a design that looks like this, and the camera would be close to the four stacks that are green here (and the little yellow focus marker is there, I forgot to mention it I think.. That little yellow box with a black border marks where the Focus point is.

Let us render this one and see how it looks.
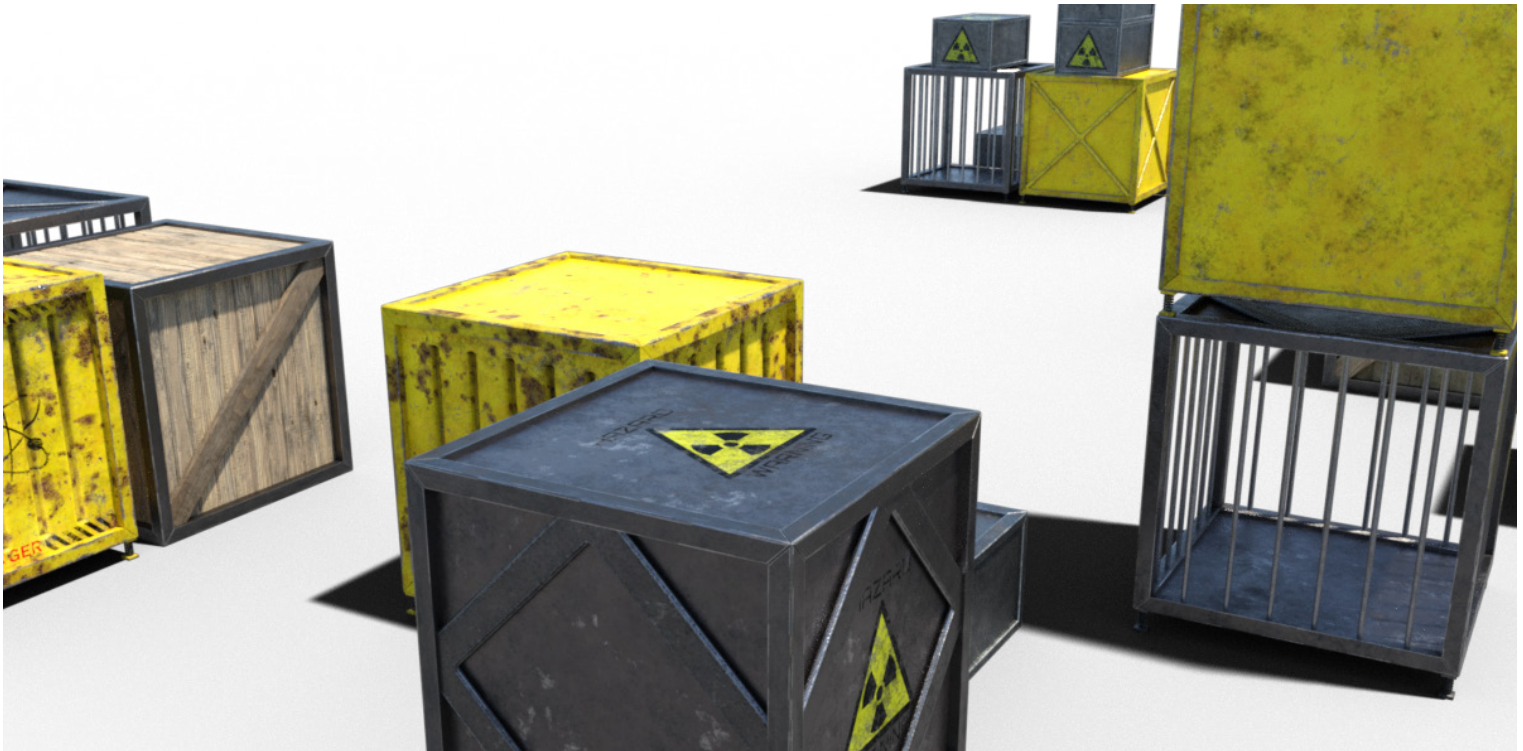
As you see the number of results you can get from Crate Factory is close to infinite, so it's all about testing and testing. If you are the adventurous kind, you might like to study the Technical Documentation as it will teach you how you can extend Crate Factory beyond the current limitations when it comes to textures and combinations, but be aware, it's not for the faint hearted, the nerd level is turned to 11, at least.