

## Deadlock's Stacking Beltbox & Deadlock's Crating Machine

DSB is an inline belt stacker that provides 5x belt compression for basic resources and some intermediate products. DCM is similar in some ways but it works with re-usable crates: it can achieve much higher (variable) compression but is trickier and much more expensive for players to use. If you are a Factorio modder, you can get DSB and DCM to automatically generate stacked and/or crated versions of items from your own mods. It's easy to do. You don't have to support both mods, you can support either one, or neither, your choice.

**Remember:** Both these mods are about reducing big multi-lane belt buses. I don't recommend you make every item in your mod stackable. If people usually run an 4+ lane blue bus half a mile through their base just for that item, they might benefit, but probably not otherwise.

### • Step 1

Add `"?DeadlockStacking"` and/or `"?DeadlockCrating"` as optional dependencies in your mod's `info.json`. For example:

```
{
  "name": "DeadlockTweaks",
  "version": "0.1.0",
  "title": "Deadlock's Tweaks",
  "author": "Deadlock989",
  "contact": "",
  "homepage": "",
  "dependencies": ["base >= 0.16.0", "?DeadlockStacking", "?DeadlockCrating"],
  "description": "Some small quality of life adjustments.",
  "factorio_version": "0.16"
}
```

### • Step 2

Both mods expose a function which does everything needed. You must call these functions from your mod's **data-final-fixes.lua**. First, check that the library is available and if so, iterate through every item you want stacked. For example:

```
-- [data-final-fixes.lua]
-- this mod makes diamonds. don't dig straight down
-- we already created our item and inserted it into data.raw
-- ...

-- get DSB to stack my itamz
if deadlock_stacking then
  -- repeat this for every item you want stacked
  deadlock_stacking.create("deadlock-uber-diamond", nil, "deadlock-stacking-1")
end

-- get DCM to crate my itamz
if deadlock_crating then
  -- repeat this for every item you want crated
  deadlock_crating.create("deadlock-uber-diamond", "deadlock-crating-1")
end
```

For DSB, the item creation function has three parameters:

**deadlock\_stacking.create(item\_name, graphic\_path, target\_tech)**

Parameter	Optional / Mandatory?	Explanation
<b>item_name</b>	Mandatory	The item name of the base item you want stacked, e.g. "iron-plate" or "mymod-uber-reactor". This must be something that already exists, e.g. a vanilla item or an item from your mod that you have already inserted into data.raw.
<b>graphic_path</b>	Usually optional	This can be the full path to a 32x32 icon that represents the stacked product, e.g. "__MyMod__/graphics/stacked-uber-reactor.png". If it is left out or specified as nil, then DSB will try and make its own layered icon out of the base item's one.
<b>target_tech</b>	Optional	If you specify a technology name (e.g. "deadlock-stacking-1"), then the mod will insert the required recipe unlock effects (stacking/unstacking or crating/uncrating) into that technology. This must be a tech that is already set up. See below for more info. If omitted or nil, the mod won't update any technologies, and you'll have to handle gaining access to the recipes yourself.

For DCM, **deadlock\_crating.create(item\_name, target\_tech)** is the same as above except without the graphic\_path parameter (all crate icons are dynamically generated).

### • Step 3 (optional)

Win.

### • More details

**Tech/migration.** DSB and DCM use tiers of technology to unlock stacking/crating recipes and also the tiered machines themselves. You can specify these as the required tech to unlock your own stacked things if you like (see table below for names). However be aware that **DSB and DCM only run technology migrations when they themselves get updated**. If you add your items to DSB or DCM technologies and then change the scheme later, you are responsible for your own migrations. See my mods' migrations folders for an example of how they handle it. You might prefer to gate your stacks/crates behind your own tech.

**Icons/sprites.** As explained, for DSB, if you don't provide an icon/sprite for the stacked item, DSB will make you one out of layers of the base icon. There's no guarantee that this will actually look good (though it's usually OK) but it is also much worse for FPS, because it's essentially 4 sprites for every item on every belt. (On the other hand, stacking saves the load of belts on UPS/FPS by up to 5x by reducing the need for screen-filling mega-buses in the first place.) **I do recommend you make icons for stacked things if players are going to make a lot of them.** Note that DSB expects that the *icon* parameter is specified in your base item's prototype (as it is in all vanilla item prototypes) and not the layered *icons*. If your mod's base item only uses *icons*, then you must

provide a graphic of the stacked item, because we can't (won't) make layers of layers. If you reference an item with *icons* but no *icon* property and haven't specified your own sprite then the item will be skipped (and logged as an error). In DCM, you don't have any leeway at all: your base item must specify an *icon* property or it won't work.

**Fuel.** In DSB, if your items have fuel values then the stacked item will inherit those fuel values (multiplying the burning time but not any vehicle modifiers). If you don't want that to happen, don't stack them. In DCM, crates can't be burned.

**Errors.** If you specify any references that doesn't exist at the time DSB generates your stuff, the items will be skipped and errors will be printed in the Factorio log (rather than just halting the loading screen with an error). If you specify a graphic path that doesn't exist, Factorio won't load.

**Item/recipe names.** If you want to use stack/crate items in recipes, they have conventionalised prefixes (see table below). For example, if your item was "uber-diamond", the generated stacked version will be "deadlock-stack-uber-diamond".

**"Helper" mods.** If your favourite modder doesn't want to / have time to provide support for stacking/crating, you could make your own mini "helper" mod which simply bridges the gap. In this case you would require their mod and DSB/DCM as fixed dependencies, not optional, and then all your mini-mod does is loop through the things you want to be stackable in its data-final-fixes.lua. Easy as cobblestone.

## • Naming conventions

	DeadlockStacking	DeadlockCrating
<b>Stack/crate items</b>	deadlock-stack-...	deadlock-crate-...
<b>Recipes</b>	deadlock-stacks-stack-... deadlock-stacks-unstack-...	deadlock-crates-pack-... deadlock-crates-unpack-...
<b>Technologies</b>	deadlock-stacking-1 deadlock-stacking-2 deadlock-stacking-3  4 and 5 are also made available if Bob's Logistics is active (5 also depends on user settings).	deadlock-crating-1 deadlock-crating-2 deadlock-crating-3  Bob's is not supported.

If you run into problems or want another feature, use the [Factorio forums thread](#) to contact me.

- Deadlock989