From OnlineWardleyMaps to Wardley-TikZ and Back

Import, edit, and export a Wardley Map

Wardley-TikZ toolkit

2026

Abstract

This tutorial starts with a real OnlineWardleyMaps (OWM) map, converts its map text into editable Wardley-TikZ source, changes the analysis in LaTeX, and exports the result to OWM again. The worked example is the Tea Shop map at onlinewardleymaps.com. A screenshot captured on 25 August 2026 records the live browser rendering. The compatibility code is separately pinned to OWM 1.121.0; the screenshot does not identify the live site's deployed commit. The imported, edited, and verified Wardley-TikZ maps use the OWM presentation profile and are vector output generated from the source printed in this document.

Round-trip boundary. The reverse converter accepts trusted Wardley-TikZ source and exports only the Wardley-TikZ features that OWM can represent. It is not a general TikZ-to-OWM converter. A general TikZ document does not register Wardley Map objects, so export fails. Raw TikZ mixed into a Wardley document is outside the round-trip contract and cannot be reconstructed. Unsupported traced Wardley-TikZ objects are rejected instead of being silently discarded.

Run every command below from the root of the `wardley-tikz` repository. A current TeX installation and Python 3 are sufficient.

1 Start with the OWM map text

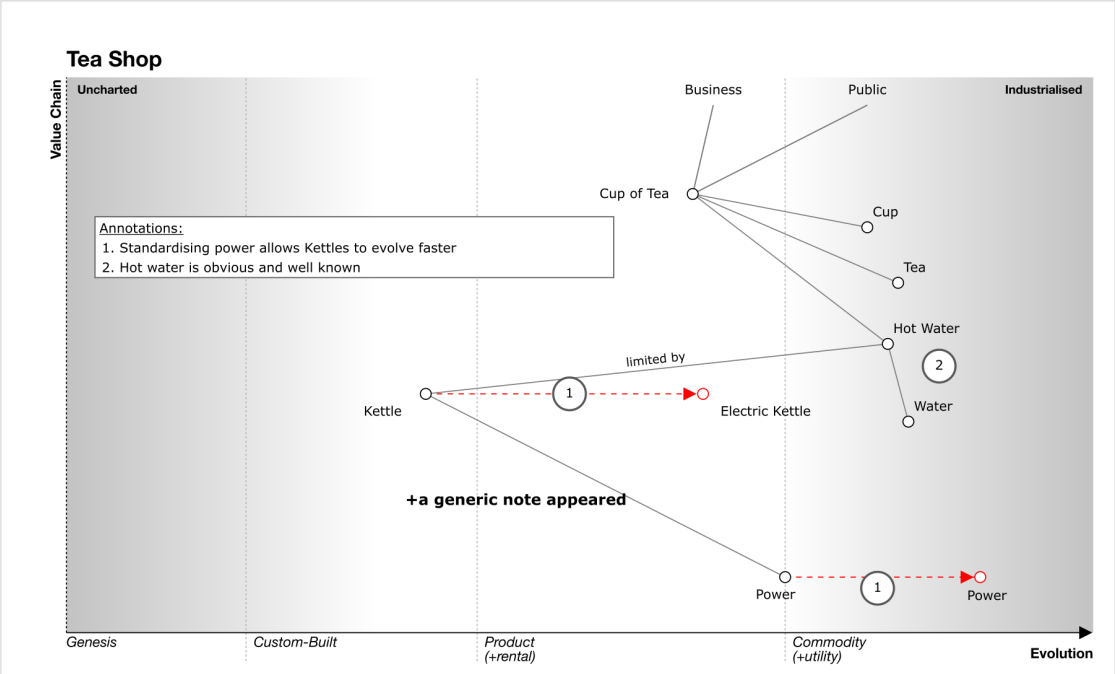
The live Tea Shop link is useful for exploring the map. The checked-in fixture `testfiles/fixtures/tea-shop-current.owm` is the reproducible input for this tutorial. It is pinned to the OWM compatibility baseline documented in `doc/owm-compatibility.md`; a later change to the website cannot silently change this example.

OWM positions are written as `[visibility, maturity]`. Higher visibility moves a component up the map; greater maturity moves it to the right. The source contains two anchors, seven components, eight dependencies, two evolution movements, a note, and two numbered annotations.

```
// Adapted from the OnlineWardleyMaps ExampleMap template, version 1.121.0.
// Copyright (c) 2019 Damon Skelhorn; licensed under the MIT License.
// Modified to exercise the pinned importer grammar; see THIRD_PARTY_NOTICES.md.
title Tea Shop
anchor Business [0.95, 0.63]
anchor Public [0.95, 0.78]
component Cup of Tea [0.79, 0.61] label [-85.48, 3.78]
component Cup [0.73, 0.78]
component Tea [0.63, 0.81]
component Hot Water [0.52, 0.80]
component Water [0.38, 0.82]
```

```
component Kettle [0.43, 0.35] label [-57, 4]
evolve Kettle->Electric Kettle 0.62 label [16, 5]
component Power [0.1, 0.7] label [-27, 20]
evolve Power 0.89 label [-12, 21]
Business->Cup of Tea
Public->Cup of Tea
Cup of Tea->Cup
Cup of Tea->Tea
Cup of Tea->Hot Water
Hot Water->Water
Hot Water->Kettle; limited by
Kettle->Power

annotation 1 [[0.43,0.49],[0.08,0.79]] Standardising power allows Kettles to evolve faster
annotation 2 [0.48, 0.85] Hot water is obvious and well known
annotations [0.72, 0.03]

note +a generic note appeared [0.23, 0.33]

style wardley
```

The dated image below records how the source appeared in the live OWM browser. It is a visual comparison, not the compatibility baseline and not evidence of the live deployment's version. The checked-in text fixture above, rather than the website or screenshot, remains the reproducible input to every conversion in this tutorial.



OnlineWardleyMaps rendering of Tea Shop from the source above, before import.

2 Import OWM into Wardley-TikZ

Run the importer and write its output to a fragment:

```
python3 scripts/owm2wardley.py \
  testfiles/fixtures/tea-shop-current.owm \
```

```
  -o examples/wardley/owm-round-trip/tea-shop-imported.wardley.tex
```

The converter TeX-escapes ordinary labels, assigns stable IDs, resolves names in links, and retains the OWM source canvas and raw label offsets as separate round-trip data. Four details matter when editing the generated fragment:

Source form	Meaning
`id=kettle`	Stable identity used by dependencies and movements.
`visibility=0.43`	Vertical analytical position, in OWM order.
`maturity=0.35`	Horizontal analytical position, in OWM order.
`owm label offset={-57,4}`	Raw OWM pixel offset, preserved unchanged for export.

The result is ordinary, editable Wardley-TikZ:

```
% Generated by scripts/owm2wardley.py; edit the OWM source.
\begin{wardleymap}[
  source size={500,600},
  title={Tea Shop},
  style=wardley,
  annotation key at={0.72,0.03}
]

  \WardleyAnchor[id=business,visibility=0.95,maturity=0.63]{Business}
  \WardleyAnchor[id=public,visibility=0.95,maturity=0.78]{Public}
  \WardleyComponent[id=cup-of-tea,visibility=0.79,maturity=0.61,owm label offset={-85.48,3.78}]{Cup of Tea}
  \WardleyComponent[id=cup,visibility=0.73,maturity=0.78]{Cup}
  \WardleyComponent[id=tea,visibility=0.63,maturity=0.81]{Tea}
  \WardleyComponent[id=hot-water,visibility=0.52,maturity=0.8]{Hot Water}
  \WardleyComponent[id=water,visibility=0.38,maturity=0.82]{Water}
  \WardleyComponent[id=kettle,visibility=0.43,maturity=0.35,owm label offset={-57,4}]{Kettle}
  \WardleyComponent[id=power,visibility=0.1,maturity=0.7,owm label offset={-27,20}]{Power}

  \WardleyEvolve[id=evolve-kettle,target id=electric-kettle,new name={Electric Kettle},owm label offset
     ={16,5}]{kettle}{0.62}
  \WardleyEvolve[id=evolve-power,target id=power-future,owm label offset={-12,21}]{power}{0.89}

  \WardleyDependency{business}{cup-of-tea}
  \WardleyDependency{public}{cup-of-tea}
  \WardleyDependency{cup-of-tea}{cup}
  \WardleyDependency{cup-of-tea}{tea}
  \WardleyDependency{cup-of-tea}{hot-water}
  \WardleyDependency{hot-water}{water}
  \WardleyDependency[context={limited by}]{hot-water}{kettle}
  \WardleyDependency{kettle}{power}

  \WardleyNote[visibility=0.23,maturity=0.33]{+a generic note appeared}

  \WardleyAnnotation[points={0.43/0.49,0.08/0.79}]{1}{Standardising power allows Kettles to evolve faster}
  \WardleyAnnotation[points={0.48/0.85}]{2}{Hot water is obvious and well known}
\end{wardleymap}
```

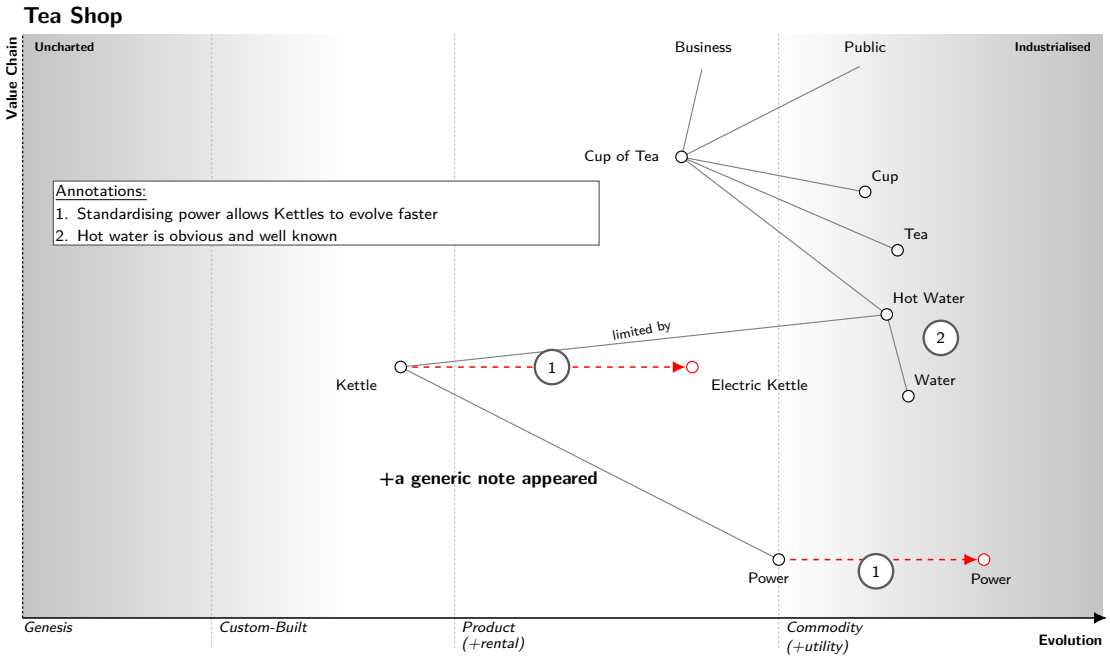
Render the imported source like OWM

Wardley-TikZ's TeX-only `owm` profile follows the pinned OWM 1.121.0 renderer without changing the imported map fragment. Its geometry, colours, and glyph conventions include a vector grey–white–grey canvas, the OWM open frame and stage captions, compact markers, grey dependencies, white annotation badges and key, and red dashed evolution arrows. Portable TeX font families stand in for the browser's preferred typefaces, so text metrics and line breaks are approximate. The live capture supplies both a 942 by 509 frame ratio and the reference label-pixel viewport, so the wrapper sets them separately:

```
style=owm,format=owm,canvas=owm,
width=16.5cm,aspect ratio=942/509,
owm viewport={942,509}
```

The aspect ratio shapes the printed frame. The presentation-only `owm viewport` key scales raw browser label pixels and defaults to `{942,509}`. It deliberately leaves the imported `source size={500,600}` and every raw `owm label offset` untouched, so the exporter can reproduce the OWM data.

The standalone wrapper `examples/wardley/owm-round-trip/tea-shop-owm-map.tex` applies that presentation profile after the fragment's own `style=wardley` option. That separation matters: `owm` is a Wardley-TikZ rendering profile, not a new OWM DSL style value. OWM source `style wardley` remains `style=wardley` in the imported fragment. The strict exporter rejects `style=owm`, so reverse export consumes the unchanged fragment rather than this presentation wrapper.



Imported Tea Shop map rendered by Wardley-TikZ in the OWM style, using the same positions and source label offsets as the browser rendering on page 2. Kettle remains at `[0.43,0.35]`, in Custom Built.

The standalone wrapper `examples/wardley/owm-round-trip/tea-shop-original-map.tex` inputs that fragment through the same presentation-only OWM profile. The fragment itself deliberately retains the OWM-compatible `style=wardley`; only the wrapper selects `style=owm`, `format=owm`, and `canvas=owm`. Compile it with:

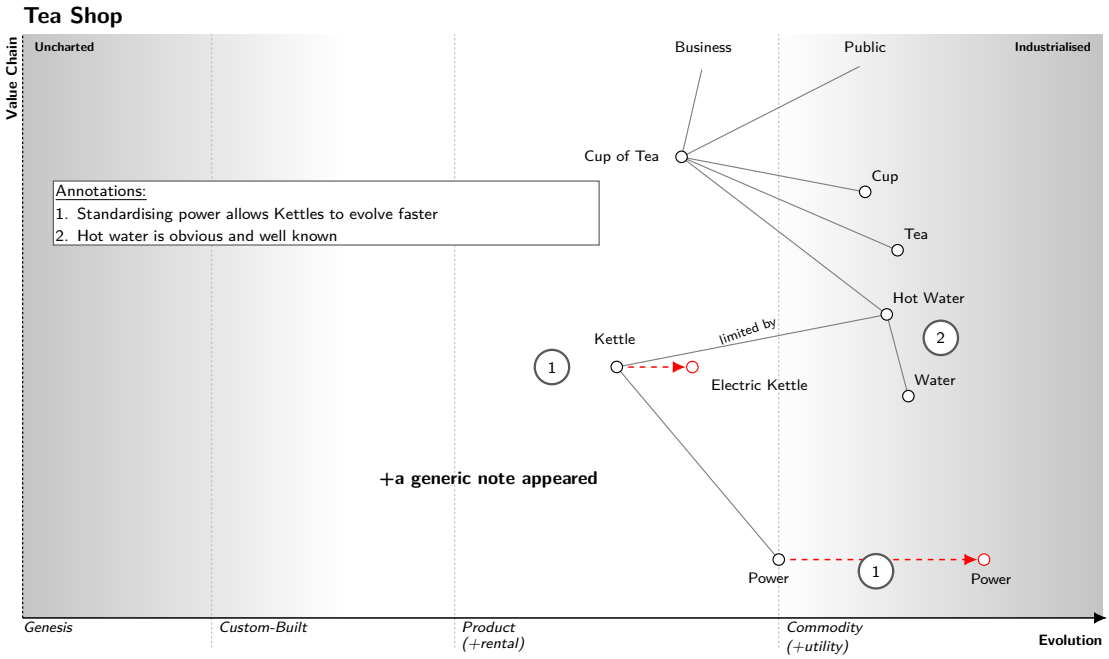
```
cd examples/wardley/owm-round-trip
pdflatex -halt-on-error tea-shop-original-map.tex
cd ../../..
```

3 Change the Wardley analysis

Suppose our evidence now says that kettles are more mature than the original map suggests. In the edited fragment, change the analytical maturity value from `0.35` to `0.55`. Then retune the imported OWM label offset from `{-57,4}` to `{-20,-20}` so the moved label remains clear in the OWM-style rendering and after re-import into OWM:

```
% Before
\WardleyComponent[
  id=kettle,visibility=0.43,maturity=0.35,
  owm label offset={-57,4}
]{Kettle}

% After
\WardleyComponent[
  id=kettle,visibility=0.43,maturity=0.55,
  owm label offset={-20,-20}
]{Kettle}
```

The maturity edit moves Kettle from Custom Built into Product while its stable `id` keeps both dependencies and its evolution movement attached. The imported `{-57,4}` label offset would put annotation marker 1 over the moved label. The edited source therefore also retunes that presentation value to `{-20,-20}`, placing the label above-left of the component and clear of annotation marker 1 in the OWM profile. This does not change Kettle's map position. The complete edited fragment is `examples/wardley/owm-round-trip/tea-shop-edited.wardley.tex`; its standalone wrapper is `tea-shop-edited-map.tex` in the same directory.



Edited Tea Shop map in Wardley-TikZ's OWM style. Kettle keeps visibility `0.43` and moves right to maturity `0.55`.

4 Export Wardley-TikZ back to OWM

The exporter compiles its input and reads Wardley-TikZ's validated map records from the build log. Run it only on TeX source you trust. Because the edited file is a map fragment rather than a complete LaTeX document, pass `--fragment`:

```
mkdir -p build/owm-round-trip
python3 scripts/wardley2owm.py --fragment \
  examples/wardley/owm-round-trip/tea-shop-edited.wardley.tex \
  -o build/owm-round-trip/tea-shop-edited.owm
```

The output is canonical OWM text. Quoting and whitespace may differ from the original input, but the map meaning is retained. Notice that the Kettle line now contains `[0.43, 0.55] label [-20, -20]`. The maturity is the analytical change; the label offset is the readability retune.

```
// Generated by scripts/wardley2owm.py from Wardley-TikZ map records.
title "Tea Shop"
size [500, 600]
style wardley

anchor "Business" [0.95, 0.63]
anchor "Public" [0.95, 0.78]
component "Cup of Tea" [0.79, 0.61] label [-85.48, 3.78]
component "Cup" [0.73, 0.78]
component "Tea" [0.63, 0.81]
component "Hot Water" [0.52, 0.8]
component "Water" [0.38, 0.82]
component "Kettle" [0.43, 0.55] label [-20, -20]
component "Power" [0.1, 0.7] label [-27, 20]

evolve "Kettle"->"Electric Kettle" 0.62 label [16, 5]
evolve "Power" 0.89 label [-12, 21]

"Business"->"Cup of Tea"
"Public"->"Cup of Tea"
"Cup of Tea"->"Cup"
"Cup of Tea"->"Tea"
"Cup of Tea"->"Hot Water"
"Hot Water"->"Water"
"Hot Water"->"Kettle"; "limited by"
"Kettle"->"Power"

note "+a generic note appeared" [0.23, 0.33]

annotation 1 [[0.43,0.49],[0.08,0.79]] "Standardising power allows Kettles to evolve faster"
annotation 2 [0.48, 0.85] "Hot water is obvious and well known"

annotations [0.72, 0.03]
```

To open the result in OWM, use the site's *Import/Export* control and paste the generated map text. OWM does not store Wardley-TikZ IDs, so an eventual re-import generates stable IDs from the exported names again.

5 Verify the round trip

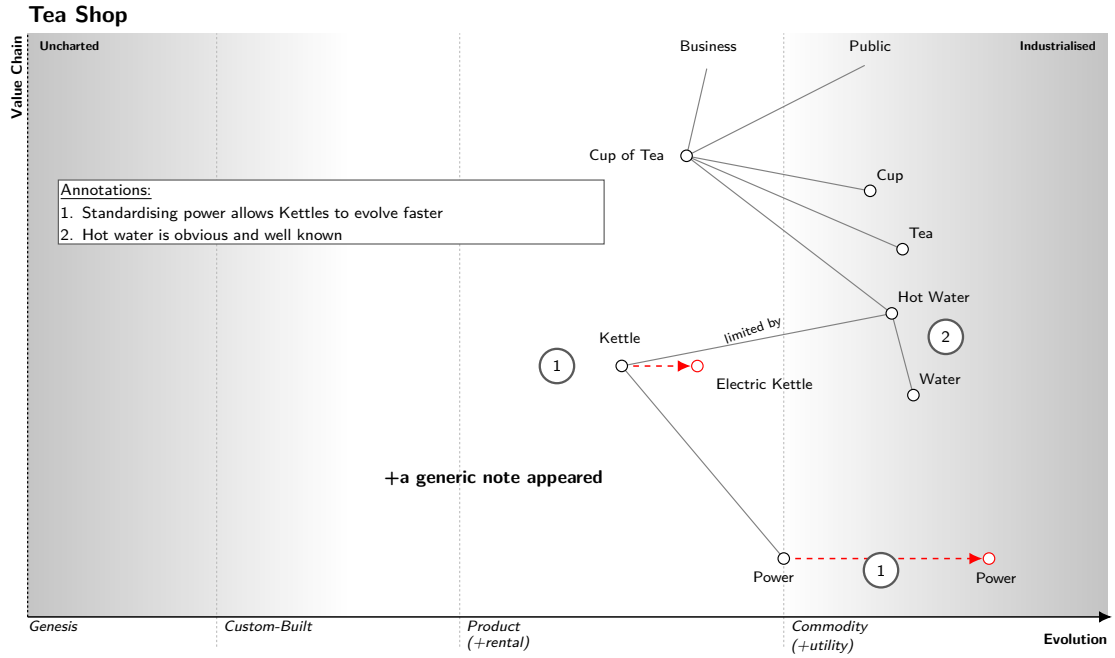
First compare the generated file with the canonical output shipped with this tutorial. Then import that output, export it again, and compare the two canonical OWM files:

```
diff -u \
  examples/wardley/owm-round-trip/tea-shop-edited.owm \
```

```
  build/owm-round-trip/tea-shop-edited.owm

python3 scripts/owm2wardley.py \
  build/owm-round-trip/tea-shop-edited.owm \
  -o build/owm-round-trip/tea-shop-reimported.wardley.tex

python3 scripts/wardley2owm.py --fragment \
  build/owm-round-trip/tea-shop-reimported.wardley.tex \
  -o build/owm-round-trip/tea-shop-round-trip.owm

diff -u \
  build/owm-round-trip/tea-shop-edited.owm \
  build/owm-round-trip/tea-shop-round-trip.owm
```

Both `diff` commands should print nothing. This verifies the canonical OWM representation, including map objects, positions, relationships, movements, notes, annotations, style, source size, and label offsets. It does not include the wrapper's presentation-only `owm viewport`, and it does not promise byte-for-byte preservation of comments or the formatting of the original hand-written OWM input.

Because the canonical file is stable, re-importing it yields the same registered map objects and relationships as the edited fragment. The OWM-profile vector view below is therefore the verified result; it is generated TeX, not a second browser screenshot.



Verified OWM round-trip result, shown with the browser-aligned OWM profile. Kettle remains at `[0.43,0.55]`*; the topology, movements, note, and annotations are unchanged.*

6 Know what can travel back

The safe round-trip surface is the intersection of the two languages: components and markerless anchors, dependencies and supported flows, evolution, component decorators and inertia, notes, annotations, pipelines, Pioneer–Settler–Town Planner areas, OWM stage settings, source size, and the supported OWM styles. Presentation-only values such as `owm viewport` do not travel back.

Wardley-TikZ also traces objects that OWM 1.121.0 cannot express, including states, ownership regions, metrics, climate and resistance overlays, routed ribbons, callouts, and local map labels. The exporter stops with a diagnostic when one of those objects is present. A general TikZ document fails because it has no Wardley trace. Raw TikZ mixed into a Wardley document is outside the contract: only registered Wardley objects can travel back, so the raw drawing cannot be reconstructed in OWM. Keep Wardley-TikZ as the authoritative source whenever that local drawing matters.

> **Round-trip boundary.** Use OWM when browser editing and sharing are the next step. Use Wardley-TikZ when the map needs reproducible typesetting, vector publication, stable IDs, or analysis objects beyond OWM's language. Round-tripping is reliable inside the documented features that both tools support.

Files used by this tutorial

File	Role
`testfiles/fixtures/tea-shop-current.owm`	Canonical OWM input.
`tea-shop-imported.wardley.tex`	Deterministic importer output.
`tea-shop-edited.wardley.tex`	Wardley-TikZ source with Kettle at maturity `0.55` and a cleared label.
`tea-shop-edited.owm`	Canonical reverse-export result.
`tea-shop-owm-rendering.png`	Dated OWM browser rendering of the canonical input.
`tea-shop-owm-rendering.tex`	Presentation-only OWM vector profile used by every displayed Wardley-TikZ map.
`tea-shop-owm-map.tex`	Standalone wrapper for the OWM-profile vector map.
`tea-shop-original-map.tex`	Standalone wrapper for the imported map.
`tea-shop-edited-map.tex`	Standalone wrapper for the edited map.