This example shows the automatically created async commons chunks.

The example entry references two chunks:

- entry chunk
  - async require -> chunk X
  - async require -> chunk Y
- chunk X
  - module `a`
  - module `b`
  - module `c`
- chunk Y
  - module `a`
  - module `b`
  - module `d`

These chunks share modules `a` and `b`. The optimization extract these into chunk Z:

Note: The optimization compares the size of chunk Z to some minimum value, but this is disabled from this example. In practice, there is no configuration needed for this.

- entry chunk
  - async require -> chunk X & Z
  - async require -> chunk Y & Z
- chunk X
  - module `c`
- chunk Y
  - module `d`
- chunk Z
  - module `a`
  - module `b`

Pretty useful for a router in a SPA.

example.js

```js
// a chunks with a, b, c
require(["./a", "./b", "./c"]);

// a chunk with a, b, d
require.ensure(["./a"], function(require) {
    require("./b");
    require("./d");
});
```

dist/output.js

```
/******/ (() => { // webpackBootstrap
/******/ 	var __webpack_modules__ = ({});

/* webpack runtime code */

/************************************************************************/
/******/ 	// The module cache
/******/ 	var __webpack_module_cache__ = {};
/******/
/******/ 	// The require function
/******/ 	function __webpack_require__(moduleId) {
/******/ 		// Check if module is in cache
/******/ 		var cachedModule = __webpack_module_cache__[moduleId];
/******/ 		if (cachedModule !== undefined) {
/******/ 			return cachedModule.exports;
/******/ 		}
/******/ 		// Create a new module (and put it into the cache)
/******/ 		var module = __webpack_module_cache__[moduleId] = {
/******/ 			// no module.id needed
/******/ 			// no module.loaded needed
/******/ 			exports: {}
/******/ 		};
/******/
/******/ 		// Execute the module function
/******/ 		__webpack_modules__[moduleId](module, module.exports, __webpack_require__);
/******/
/******/ 		// Return the exports of the module
/******/ 		return module.exports;
/******/ 	}
/******/
/******/ 	// expose the modules object (__webpack_modules__)
/******/ 	__webpack_require__.m = __webpack_modules__;
/******/
/************************************************************************/
/******/ 	/* webpack/runtime/ensure chunk */
/******/ 	(() => {
/******/ 		__webpack_require__.f = {};
/******/ 		// This file contains only the entry chunk.
/******/ 		// The chunk loading function for additional chunks
/******/ 		__webpack_require__.e = (chunkId) => {
/******/ 			return Promise.all(Object.keys(__webpack_require__.f).reduce((promises,
/******/ 				__webpack_require__.f[key](chunkId, promises);
/******/ 				return promises;
/******/ 			}, []));
/******/ 		};
```

```
/******/        })();
/******/
/******/        /* webpack/runtime/get javascript chunk filename */
/******/        (() => {
/******/            // This function allow to reference async chunks
/******/            __webpack_require__.u = (chunkId) => {
/******/                // return url for filenames based on template
/******/                return "" + chunkId + ".output.js";
/******/            };
/******/        })();
/******/
/******/        /* webpack/runtime/hasOwnProperty shorthand */
/******/        (() => {
/******/            __webpack_require__.o = (obj, prop) => (Object.prototype.hasOwnProperty.cal
/******/        })();
/******/
/******/        /* webpack/runtime/load script */
/******/        (() => {
/******/            var inProgress = {};
/******/            // data-webpack is not used as build has no uniqueName
/******/            // loadScript function to load a script via script tag
/******/            __webpack_require__.l = (url, done, key, chunkId) => {
/******/                if(inProgress[url]) { inProgress[url].push(done); return; }
/******/                var script, needAttach;
/******/                if(key !== undefined) {
/******/                    var scripts = document.getElementsByTagName("script");
/******/                    for(var i = 0; i < scripts.length; i++) {
/******/                        var s = scripts[i];
/******/                        if(s.getAttribute("src") == url) { script = s; break; }
/******/                    }
/******/                }
/******/                if(!script) {
/******/                    needAttach = true;
/******/                    script = document.createElement('script');
/******/
/******/                    script.charset = 'utf-8';
/******/                    script.timeout = 120;
/******/                    if (__webpack_require__.nc) {
/******/                        script.setAttribute("nonce", __webpack_require__.nc);
/******/                    }
/******/
/******/                    script.src = url;
/******/                }
/******/                inProgress[url] = [done];
/******/                var onScriptComplete = (prev, event) => {
/******/                    // avoid mem leaks in IE.
```

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```
/******/                    script.onerror = script.onload = null;
/******/                    clearTimeout(timeout);
/******/                    var doneFns = inProgress[url];
/******/                    delete inProgress[url];
/******/                    script.parentNode && script.parentNode.removeChild(script);
/******/                    doneFns && doneFns.forEach((fn) => (fn(event)));
/******/                    if(prev) return prev(event);
/******/                }
/******/                ;
/******/                var timeout = setTimeout(onScriptComplete.bind(null, undefined, { type:
/******/                script.onerror = onScriptComplete.bind(null, script.onerror);
/******/                script.onload = onScriptComplete.bind(null, script.onload);
/******/                needAttach && document.head.appendChild(script);
/******/            };
/******/        })();
/******/
/******/        /* webpack/runtime/publicPath */
/******/        (() => {
/******/            __webpack_require__.p = "dist/";
/******/        })();
/******/
/******/        /* webpack/runtime/jsonp chunk loading */
/******/        (() => {
/******/            // no baseURI
/******/
/******/            // object to store loaded and loading chunks
/******/            // undefined = chunk not loaded, null = chunk preloaded/prefetched
/******/            // [resolve, reject, Promise] = chunk loading, 0 = chunk loaded
/******/            var installedChunks = {
/******/                179: 0
/******/            };
/******/
/******/            __webpack_require__.f.j = (chunkId, promises) => {
/******/                    // JSONP chunk loading for javascript
/******/                    var installedChunkData = __webpack_require__.o(installedChunks, chu
/******/                    if(installedChunkData !== 0) { // 0 means "already installed".
/******/
/******/                        // a Promise means "currently loading".
/******/                        if(installedChunkData) {
/******/                            promises.push(installedChunkData[2]);
/******/                        } else {
/******/                            if(true) { // all chunks have JS
/******/                                // setup Promise in chunk cache
/******/                                var promise = new Promise((resolve, reject) => (install
/******/                                promises.push(installedChunkData[2] = promise);
/******/
```

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```
/******/                                    // start chunk loading
/******/                                    var url = __webpack_require__.p + __webpack_require__.u
/******/                                    // create error before stack unwound to get useful stac
/******/                                    var error = new Error();
/******/                                    var loadingEnded = (event) => {
/******/                                        if(__webpack_require__.o(installedChunks, chunkId))
/******/                                            installedChunkData = installedChunks[chunkId];
/******/                                            if(installedChunkData !== 0) installedChunks[ch
/******/                                            if(installedChunkData) {
/******/                                                var errorType = event && (event.type === 'l
/******/                                                var realSrc = event && event.target && even
/******/                                                error.message = 'Loading chunk ' + chunkId
/******/                                                error.name = 'ChunkLoadError';
/******/                                                error.type = errorType;
/******/                                                error.request = realSrc;
/******/                                                installedChunkData[1](error);
/******/                                            }
/******/                                        }
/******/                                    };
/******/                                    __webpack_require__.l(url, loadingEnded, "chunk-" + chu
/******/                                } else installedChunks[chunkId] = 0;
/******/                            }
/******/                        }
/******/                };
/******/
/******/            // no prefetching
/******/
/******/            // no preloaded
/******/
/******/            // no HMR
/******/
/******/            // no HMR manifest
/******/
/******/            // no on chunks loaded
/******/
/******/            // install a JSONP callback for chunk loading
/******/            var webpackJsonpCallback = (parentChunkLoadingFunction, data) => {
/******/                var [chunkIds, moreModules, runtime] = data;
/******/                // add "moreModules" to the modules object,
/******/                // then flag all "chunkIds" as loaded and fire callback
/******/                var moduleId, chunkId, i = 0;
/******/                if(chunkIds.some((id) => (installedChunks[id] !== 0))) {
/******/                    for(moduleId in moreModules) {
/******/                        if(__webpack_require__.o(moreModules, moduleId)) {
/******/                            __webpack_require__.m[moduleId] = moreModules[moduleId];
/******/                        }
```

```
/******/                      }
/******/                      if(runtime) var result = runtime(__webpack_require__);
/******/                  }
/******/                  if(parentChunkLoadingFunction) parentChunkLoadingFunction(data);
/******/                  for(;i < chunkIds.length; i++) {
/******/                      chunkId = chunkIds[i];
/******/                      if(__webpack_require__.o(installedChunks, chunkId) && installedChun
/******/                          installedChunks[chunkId][0]();
/******/                      }
/******/                      installedChunks[chunkIds[i]] = 0;
/******/                  }
/******/
/******/          }
/******/
/******/          var chunkLoadingGlobal = self["webpackChunk"] = self["webpackChunk"] || [];
/******/          chunkLoadingGlobal.forEach(webpackJsonpCallback.bind(null, 0));
/******/          chunkLoadingGlobal.push = webpackJsonpCallback.bind(null, chunkLoadingGloba
/******/      })();
/******/
/************************************************************************/
var __webpack_exports__ = {};
/*!********************!*\
  !*** ./example.js ***!
  \********************/
/*! unknown exports (runtime-defined) */
/*! runtime requirements: __webpack_require__, __webpack_require__.e, __webpack_require__.o
// a chunks with a, b, c
Promise.all(/*! AMD require */[__webpack_require__.e(394), __webpack_require__.e(460)]).the

// a chunk with a, b, d
Promise.all(/*! require.ensure */[__webpack_require__.e(394), __webpack_require__.e(767)]).
    __webpack_require__(/*! ./b */ 2);
    __webpack_require__(/*! ./d */ 4);
}).bind(null, __webpack_require__)).catch(__webpack_require__.oe);

/******/ })()
;
```

dist/394.output.js

```
(self["webpackChunk"] = self["webpackChunk"] || []).push([[394],[
/* 0 */,
/* 1 */
/*!**************!*\
```

```
     !*** ./a.js ***!
     \*************/
/*! unknown exports (runtime-defined) */
/*! runtime requirements: module */
/*! CommonJS bailout: module.exports is used directly at 1:0-14 */
/***/ ((module) => {

module.exports = "a";

/***/ }),
/* 2 */
/*!*************!*\
     !*** ./b.js ***!
     \*************/
/*! unknown exports (runtime-defined) */
/*! runtime requirements: module */
/*! CommonJS bailout: module.exports is used directly at 1:0-14 */
/***/ ((module) => {

module.exports = "b";

/***/ })
]]);
```

dist/460.output.js

```
(self["webpackChunk"] = self["webpackChunk"] || []).push([[460],{

/***/ 3:
/*!*************!*\
     !*** ./c.js ***!
     \*************/
/*! unknown exports (runtime-defined) */
/*! runtime requirements: module */
/*! CommonJS bailout: module.exports is used directly at 1:0-14 */
/***/ ((module) => {

module.exports = "c";

/***/ })

}]);
```

dist/767.output.js

```
(self["webpackChunk"] = self["webpackChunk"] || []).push([[767],{

/***/ 4:
/*!***************!*\
  !*** ./d.js ***!
  \***************/
/*! unknown exports (runtime-defined) */
/*! runtime requirements: module */
/*! CommonJS bailout: module.exports is used directly at 1:0-14 */
/***/ ((module) => {

module.exports = "d";

/***/ })

}]);
```

Info

Unoptimized

```
asset output.js 9.18 KiB [emitted] (name: main)
asset 394.output.js 610 bytes [emitted]
asset 460.output.js 338 bytes [emitted]
asset 767.output.js 338 bytes [emitted]
chunk (runtime: main) output.js (main) 164 bytes (javascript) 4.98 KiB (runtime) [entry] [re
  > ./example.js main
  runtime modules 4.98 KiB 6 modules
  ./example.js 164 bytes [built] [code generated]
    [used exports unknown]
    entry ./example.js main
chunk (runtime: main) 394.output.js 42 bytes [rendered] split chunk (cache group: default)
  > ./a ./b ./c ./example.js 2:0-30
  > ./example.js 5:0-8:2
  ./a.js 21 bytes [built] [code generated]
    [used exports unknown]
    cjs self exports reference ./a.js 1:0-14
    amd require ./a ./example.js 2:0-30
    require.ensure item ./a ./example.js 5:0-8:2
  ./b.js 21 bytes [built] [code generated]
    [used exports unknown]
    cjs self exports reference ./b.js 1:0-14
    amd require ./b ./example.js 2:0-30
```

```
      cjs require ./b ./example.js 6:1-15
chunk (runtime: main) 460.output.js 21 bytes [rendered]
  > ./a ./b ./c ./example.js 2:0-30
  ./c.js 21 bytes [built] [code generated]
    [used exports unknown]
    cjs self exports reference ./c.js 1:0-14
    amd require ./c ./example.js 2:0-30
chunk (runtime: main) 767.output.js 21 bytes [rendered]
  > ./example.js 5:0-8:2
  ./d.js 21 bytes [built] [code generated]
    [used exports unknown]
    cjs self exports reference ./d.js 1:0-14
    cjs require ./d ./example.js 7:1-15
webpack 5.51.1 compiled successfully
```

Production mode

```
asset output.js 1.81 KiB [emitted] [minimized] (name: main)
asset 394.output.js 104 bytes [emitted] [minimized]
asset 460.output.js 81 bytes [emitted] [minimized]
asset 767.output.js 81 bytes [emitted] [minimized]
chunk (runtime: main) output.js (main) 164 bytes (javascript) 4.98 KiB (runtime) [entry] [re
  > ./example.js main
  runtime modules 4.98 KiB 6 modules
  ./example.js 164 bytes [built] [code generated]
    [no exports used]
    entry ./example.js main
chunk (runtime: main) 394.output.js 42 bytes [rendered] split chunk (cache group: default)
  > ./a ./b ./c ./example.js 2:0-30
  > ./example.js 5:0-8:2
  ./a.js 21 bytes [built] [code generated]
    [used exports unknown]
    cjs self exports reference ./a.js 1:0-14
    amd require ./a ./example.js 2:0-30
    require.ensure item ./a ./example.js 5:0-8:2
  ./b.js 21 bytes [built] [code generated]
    [used exports unknown]
    cjs self exports reference ./b.js 1:0-14
    amd require ./b ./example.js 2:0-30
    cjs require ./b ./example.js 6:1-15
chunk (runtime: main) 460.output.js 21 bytes [rendered]
  > ./a ./b ./c ./example.js 2:0-30
  ./c.js 21 bytes [built] [code generated]
    [used exports unknown]
    cjs self exports reference ./c.js 1:0-14
    amd require ./c ./example.js 2:0-30
```

```
chunk (runtime: main) 767.output.js 21 bytes [rendered]
  > ./example.js 5:0-8:2
  ./d.js 21 bytes [built] [code generated]
    [used exports unknown]
    cjs self exports reference ./d.js 1:0-14
    cjs require ./d ./example.js 7:1-15
webpack 5.51.1 compiled successfully
```