

# AboutPlugins

Nutch's plugin system is based on the one used in [Eclipse 2.x](#). Plugins are central to how Nutch works. All of the parsing, indexing and searching that Nutch does is actually accomplished by various plugins.

In writing a plugin, you're actually providing one or more *extensions* of the existing *extension-points*. The core Nutch *extension-points* are themselves defined in a plugin, the [NutchExtensionPoints](#) plugin (they are listed in the NutchExtensionPoints [plugin.xml](#) file). Each *extension-point* defines an interface that must be implemented by the *extension*. The core extension points are:

- [IndexWriter](#) – Writes crawled data to a specific indexing backends (Solr, [ElasticSearch](#), a CVS file, etc.).
- [IndexingFilter](#) – Permits one to add metadata to the indexed fields. All plugins found which implement this extension point are run sequentially on the parse (from javadoc).
- [Exchange](#) – Allows to route a document during indexing to a specific index writer if there are multiple index writers.
- [Parser](#) – Parser implementations read through fetched documents in order to extract data to be indexed. This is what you need to implement if you want Nutch to be able to parse a new type of content, or extract more data from currently parseable content.
- [HtmlParseFilter](#) – Permits one to add additional metadata to HTML parses (from javadoc).
- [Protocol](#) – Protocol implementations allow Nutch to use different protocols (ftp, http, etc.) to fetch documents, see [ProtocolImplementations](#).
- [URLFilter](#) – URLFilter implementations limit the URLs that Nutch attempts to fetch. The [RegexURLFilter](#) distributed with Nutch provides a great deal of control over what URLs Nutch crawls, however if you have very complicated rules about what URLs you want to crawl, you can write your own implementation.
- [URLNormalizer](#) – Interface used to convert URLs to normal form and optionally perform substitutions.
- [ScoringFilter](#) – A contract defining behavior of scoring plugins. A scoring filter will manipulate scoring variables in [CrawlDatum](#) and in resulting search indexes. Filters can be chained in a specific order, to provide multi-stage scoring adjustments.
- [SegmentMergeFilter](#) – Interface used to filter segments during segment merge. It allows filtering on more sophisticated criteria than just URLs. In particular it allows filtering based on metadata collected while parsing page.

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## Source Files

You'll find the following inside of a plugin source directory:

- A [plugin.xml](#) file that tells Nutch about the plugin.
- A [build.xml](#) file that tells ant how to build the plugin.
- A [ivy.xml](#) file that describes any dependencies required by the plugin. These are subsequently managed by Apache Ivy.
- The source code of the plugin.

## Getting Nutch to Use a Plugin

In order to get Nutch to use a given plugin, you need to edit your `conf/nutch-site.xml` file and add the name of the plugin to the list of `plugin.includes`. Additionally we are required to add the various build configurations to [build.xml](#) in the plugin directory.

## Using a Plugin From The Command Line

Nutch ships with a number of plugins that include a `main()` method, and sample code to illustrate their use. These plugins can be used from the command line - a good way to start exploring the internal workings of each plugin.

To do so, you need to use the `bin/nutch` script from the `$NUTCH_HOME` directory,

```
$ bin/nutch plugin Usage: [PluginRepository] pluginId className [arg1 arg2 ...]
```

As an example, if you wanted to execute the `parse-html` plugin,

```
$ bin/nutch plugin parse-html org.apache.nutch.parse.html.HtmlParser filename.html
```

The [PluginRepository](#) is the name of the plugin itself, and the `pluginId` is the fully qualified name of the plugin class.

<<< See also: [WritingPluginExample](#)

<<< See also: [HowToContribute](#)

<<< [PluginCentral](#)