

# How to expose SiteAccess aware configuration for your bundle

## Version compatibility

This recipe is compatible with **eZ Publish 5.4 / 2014.07**

- Description
- Semantic configuration parsing
- Mapping to internal settings
  - Merging hash values between scopes
    - Merge from second level
    - Limitations
- Dedicated mapper object
  - Merging hash values between scopes

**EZP >= 5.4 / 2014.07**

## Description

Symfony Config component makes it possible to define *semantic configuration*, exposed to the end-developer. This configuration is validated by rules you define, e.g. validating type (string, array, integer, boolean...). Usually, once validated and processed this semantic configuration is then mapped to internal *key/value* parameters stored in the `ServiceContainer`.

eZ Publish uses this for its core configuration, but adds another configuration level, the **SiteAccess**. For each defined SiteAccess, we need to be able to use the same configuration tree in order to define SiteAccess specific config. These settings then need to be mapped to SiteAccess aware internal parameters, that one can retrieve via the `ConfigResolver`. For this, internal keys need to follow the format `<namespace>.<scope>.<parameter_name>`, `namespace` being specific to your app/bundle, `scope` being the SiteAccess, SiteAccess group, default or global, `parameter_name` being the actual setting *identifier*.

For more information on `ConfigResolver`, namespaces and scopes, see [eZ Publish configuration basics](#).

Goal of this feature is to make it easy to implement a *SiteAccess aware* semantic configuration and its mapping to internal config for any eZ bundle developer.

## Semantic configuration parsing

An abstract `Configuration` class has been added, simplifying the way to add a SiteAccess settings tree like the following:

## ezpublish.yml or config.yml

```
acme_demo:
  system:
    my_siteaccess:
      hello: "world"
      foo_setting:
        an_integer: 456
        enabled: true

    my_siteaccess_group:
      hello: "universe"
      foo_setting:
        foo: "bar"
        some: "thing"
        an_integer: 123
        enabled: false
```

Class FQN is `eZ\Bundle\EzPublishCoreBundle\DependencyInjection\Configuration\SiteAccessAware\Configuration`. All you have to do is to extend it and use `$this->generateScopeBaseNode()`:

```
namespace Acme\DemoBundle\DependencyInjection;

use
eZ\Bundle\EzPublishCoreBundle\DependencyInjection\Configuration\SiteAccessAware\Config
uration as SiteAccessConfiguration;
use Symfony\Component\Config\Definition\Builder\NodeBuilder;
use Symfony\Component\Config\Definition\Builder\TreeBuilder;

class Configuration extends SiteAccessConfiguration
{
    public function getConfigTreeBuilder()
    {
        $treeBuilder = new TreeBuilder();
        $rootNode = $treeBuilder->root( 'acme_demo' );

        // $systemNode will then be the root of siteaccess aware settings.
        $systemNode = $this->generateScopeBaseNode( $rootNode );
        $systemNode
            ->scalarNode( 'hello' )->isRequired()->end()
            ->arrayNode( 'foo_setting' )
                ->children()
                    ->scalarNode( "foo" )->end()
                    ->scalarNode( "some" )->end()
                    ->integerNode( "an_integer" )->end()
                    ->booleanNode( "enabled" )->end()
                ->end()
            ->end();

        return $treeBuilder;
    }
}
```

Default name for the *SiteAccess root node* is `system`, but you can customize it. For this, just pass the name you want to use as a 2nd argument of `$this->generateScopeBaseNode()`.

## Mapping to internal settings

Semantic configuration must always be *mapped* to internal *key/value* settings within the `ServiceContainer`. This is usually done in the DIC extension.

For `SiteAccess` aware settings, new `ConfigurationProcessor` and `Contextualizer` classes have been introduced to ease the process.

```

namespace Acme\DemoBundle\DependencyInjection;

use
eZ\Bundle\EzPublishCoreBundle\DependencyInjection\Configuration\SiteAccessAware\Config
urationProcessor;
use
eZ\Bundle\EzPublishCoreBundle\DependencyInjection\Configuration\SiteAccessAware\Context
ualizerInterface;
use Symfony\Component\DependencyInjection\ContainerBuilder;
use Symfony\Component\Config\FileLocator;
use Symfony\Component\HttpKernel\DependencyInjection\Extension;
use Symfony\Component\DependencyInjection\Loader;

/**
 * This is the class that loads and manages your bundle configuration
 *
 * To learn more see {@link
http://symfony.com/doc/current/cookbook/bundles/extension.html
}
 */
class AcmeDemoExtension extends Extension
{
    public function load( array $configs, ContainerBuilder $container )
    {
        $configuration = $this->getConfiguration( $configs, $container );
        $config = $this->processConfiguration( $configuration, $configs );

        $loader = new Loader\YamlFileLoader( $container, new FileLocator(
__DIR__.'../../Resources/config' ) );
        $loader->load( 'default_settings.yml' );

        // "acme_demo" will be the namespace as used in ConfigResolver format.
        $processor = new ConfigurationProcessor( $container, 'acme_demo' );
        $processor->mapConfig(
            $config,
            // Any kind of callable can be used here.
            // It will be called for each declared scope/SiteAccess.
            function ( $scopeSettings, $currentScope, ContextualizerInterface
$contextualizer )
            {
                // Will map "hello" setting to "acme_demo.<$currentScope>.hello"
                container parameter
                // It will then be possible to retrieve this parameter through
                ConfigResolver in the application code:
                // $helloSetting = $configResolver->getParameter( 'hello', 'acme_demo'
);
                $contextualizer->setContextualParameter( 'hello', $currentScope,
$scopeSettings['hello'] );
            }
        );

        // Now map "foo_setting" and ensure keys defined for "my_siteaccess" overrides
the one for "my_siteaccess_group"
        // It is done outside the closure as it is needed only once.
        $processor->mapConfigArray( 'foo_setting', $config );
    }
}

```

**Tip**

You can map simple settings by calling `$processor->mapSetting()`, without having to call `$processor->mapConfig()` with a callable.

```
$processor = new ConfigurationProcessor( $container, 'acme_demo' );
$processor->mapSetting( 'hello', $config );
```

**Important:** Always ensure you have defined and loaded default settings.

**@AcmeDemoBundle/Resources/config/default\_settings.yml**

```
parameters:
  acme_demo.default.hello: world
  acme_demo.default.foo_setting:
    foo: ~
    some: ~
    planets: [Earth]
    an_integer: 0
    enabled: false
    j_adore: les_sushis
```

## Merging hash values between scopes

When you define a hash as semantic config, you sometimes don't want the SiteAccess settings to replace the default or group values, but *enrich* them by appending new entries. This is made possible by using `$processor->mapConfigArray()`, which needs to be called outside the closure (before or after), in order to be called only once.

Consider the following default config:

**default\_settings.yml**

```
parameters:
  acme_demo.default.foo_setting:
    foo: ~
    some: ~
    planets: [Earth]
    an_integer: 0
    enabled: false
    j_adore: les_sushis
```

And then this semantic config:

### ezpublish.yml or config.yml

```
acme_demo:
  system:
    sa_group:
      foo_setting:
        foo: bar
        some: thing
        an_integer: 123

    # Assuming "sal" is part of "sa_group"
    sal:
      foo_setting:
        an_integer: 456
        enabled: true
        j_adore: le_saucisson
```

What we want here, is that keys defined for `foo_setting` are merged between default/group/SiteAccess:

### Expected result

```
parameters:
  acme_demo.sal.foo_setting:
    foo: bar
    some: thing
    planets: [Earth]
    an_integer: 456
    enabled: true
    j_adore: le_saucisson
```

### Merge from *second level*

In the example above, entries were merged in respect to the scope order of precedence. However, if we define the `planets` key for `sal`, it will completely override the default value since the merge process is done at only 1 level.

You can add another level by passing `ContextualizerInterface::MERGE_FROM_SECOND_LEVEL` as an option (3rd argument) to `$contextualizer->mapConfigArray()`.

### default\_settings.yml

```
parameters:
  acme_demo.default.foo_setting:
    foo: ~
    some: ~
    planets: [Earth]
    an_integer: 0
    enabled: false
    j_adore: [les_sushis]
```

## Semantic config (ezpublish.yml / config.yml)

```
acme_demo:
  system:
    sa_group:
      foo_setting:
        foo: bar
        some: thing
        planets: [Mars, Venus]
        an_integer: 123

    # Assuming "sal" is part of "sa_group"
    sal:
      foo_setting:
        an_integer: 456
        enabled: true
        j_adore: [le_saucisson, la_truite_a_la_vapeur]
```

Result using `ContextualizerInterface::MERGE_FROM_SECOND_LEVEL` option:

```
parameters:
  acme_demo.sal.foo_setting:
    foo: bar
    some: thing
    planets: [Earth, Mars, Venus]
    an_integer: 456
    enabled: true
    j_adore: [les_suhis, le_saucisson, la_truite_a_la_vapeur]
```

There is also another option, `ContextualizerInterface::UNIQUE`, to be used when you want to ensure your array setting has unique values. It will only work on normal arrays though, not hashes.

## Limitations

A few limitation exist with this scope hash merge:

- Semantic setting name and internal name will be the same (like `foo_setting` in the examples above).
- Applicable to 1st level semantic parameter only (i.e. settings right under the SiteAccess name).
- Merge is not recursive. Only 2nd level merge is possible by using `ContextualizerInterface::MERGE_FROM_SECOND_LEVEL` option.

## Dedicated mapper object

Instead of passing a callable to `$processor->mapConfig()`, an instance of `eZ\Bundle\EzPublishCoreBundle\DependencyInjection\Configuration\SiteAccessAware\ConfigurationMapperInterface` can be passed.

This can be useful if you have a lot of configuration to map and don't want to pollute your DIC extension class (better for maintenance).

## Merging hash values between scopes

As specified above, `$contextualizer->mapConfigArray()` is not to be used within the *scope loop*, like for simple values. When using a closure/callable, you usually call it before or after `$processor->mapConfig()`. For mapper objects, a dedicated interface can be used: `HookableConfigurationMapperInterface`, which defines 2 methods: `preMap()` and `postMap()`.

