

# BEAN AUTOWIRING

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## Bean Autowiring

Instead of telling the spring to manage the dependency by writing <property> or <constructor> tag in spring bean configuration file if we instruct the spring to automatically detect the dependencies and perform the injection between them then it is called as bean autowiring.

The drawback of autowiring is we don't have control over which beans has to get injected into what, so it is least recommended to use in larger application.

It is used only where rapid application development is required.

By default bean autowire is turned off. If we want to use bean autowiring we have to turn on the bean autowire by using autowire mode.

There are four autowire modes-

`autowire="byName"`

`="byType"`

`="constructor"`

`="autodetect"`

Let's see an example

```
class Robot
{
    private Chip chip;
    public void setChip(Chip chip)
    {
        this.chip=chip;
    }
}

class Chip
{
    private String manufacturer;
    public void setManufacturer(String manufacturer)
    {
        this.manufacturer=manufacturer;
    }
}
```

```
}  
}
```



Writing the spring bean configuration file for above classes using bean autowiring.

```
<bean id="car" class="Car" autowire="byName"/>  
<bean id="chip" class="Chip">  
<property ="manufacturer" value="Intel"/>  
</bean>
```

Now when IOC container finds the bean definition for "car" it sees autowire="byName " attributes then it goes to bean class read the name of attributes for which there must be setter injection then comes back to configuration file search the bean id whose name is same as that of attribute name if finds then reads the bean definition and create the object and perform the injection.

```
<bean id="car" class="Car" autowire="byType"/>  
<bean id="chip" class="Chip">  
<property ="manufacturer" value="Intel"/>  
</bean>
```

Now when IOC container finds the bean definition for "car" it sees autowire="byType " attributes then it goes to bean class read the type of attributes for which there must be setter injection then comes back to configuration file search the bean class whose type is same as that of attribute type if finds then reads the bean definition and create the object and perform the injection.

For autowire mode byName and byType there must be setter in the corresponding class.

Now we use autowire mode as constructor like following-

```
<bean id="car" class="Car" autowire="cnstructor"/>  
<bean id="chip" class="Chip">  
<property ="manufacturer" value="Intel"/>  
</bean>
```

When IOC container see the autowire mode is constructor it goes to the respective class and search for the attributes type for which constructor is available.

After taking types of argument in constructor it comes back to bean configuration and search for the bean whose type is same as that of argument type of constructor if it is available then IOC will create the object of that bean and perform the injection.

For autowire mode constructor there must be constructor in the corresponding class.

Autodetect autowire mode has been removed from spring 3.0 onwards as it is quite confusing. In this it will tries to perform injection by finding relevant constructor by type if not found then it will finds the setter by type and performs injection.

