

Spring Professional Exam Tutorial v5.0

Question 07

Question 07 - What is an `HttpMessageConverter`?

`HttpMessageConverter` is an interface used by Spring to convert data between different formats.

REST client can specify expected format in which data should be retrieved by usage of `Accept` Header, for example `Accept: application/json`. Client can also specify format in which data will be send by usage of `Content-Type` Header, for example `Content-Type: application/xml`.

Spring keeps list of `HttpMessageConverters` and for each request, data formats requested are being analyzed and cross referenced with methods implemented in `Controllers`. Whenever match is found Spring executes proper `Controller Method` and picks `HttpMessageConverter` to perform data conversion.

`Request Mapping` annotations contains `produces` and `consumes` fields which can be used to specify `MediaType` which method can handle.

Having method identified `HttpMessageConverter` is used to:

- ▶ Convert `HttpInputMessage` to desired Type
- ▶ Convert Type to `HttpOutputMessage`

Question 07 - What is an `HttpMessageConverter`?

`HttpMessageConverter` interface specifies contract for following behaviors:

- ▶ `canRead` - indicates whether given `MediaType` can be read by converter
- ▶ `canWrite` - indicates whether given `MediaType` can be written by converter
- ▶ `getSupportedMediaTypes` - returns supported list of `MediaTypes`
- ▶ `read` - **Converts** `HttpInputMessage` **to** `Type`
- ▶ `write` - **Converts** `Type` **to** `HttpOutputMessage`

Question 07 - What is an `HttpMessageConverter`?

You can register custom `HttpMessageConverters` by implementing `WebMvcConfigurer`.

```
@Configuration
public class WebConfiguration implements WebMvcConfigurer {
    @Override
    public void configureMessageConverters(List<HttpMessageConverter<?>> converters) {
        ...
    }
}
```

When using Spring Boot, most `HttpMessageConverters` will be registered automatically. Automatic registration is implemented in `HttpMessageConvertersAutoConfiguration`, and default list of converters is created inside `WebMvcConfigurationSupport.addDefaultHttpMessageConverters`.

Question 07 - What is an `HttpMessageConverter`?

Commonly used `HttpMessageConverters` are:

- ▶ `MappingJackson2HttpMessageConverter`
- ▶ `MappingJackson2XmlHttpMessageConverter`
- ▶ `Jaxb2RootElementHttpMessageConverter`
- ▶ `FormHttpMessageConverter`
- ▶ `RssChannelHttpMessageConverter`
- ▶ `AtomFeedHttpMessageConverter`
- ▶ `StringHttpMessageConverter`
- ▶ `ByteArrayHttpMessageConverter`

