WCF 4.0 Configuration Model Updates

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Outline

- **Default Endpoints**
- **Default Bindings**
- **Default Behaviors**
- **Common Behaviors**
- **Standard Endpoints**
- **File-less Activation**

Default endpoints

- **WCF 3.x services required at least one endpoint or you'd get an exception**

- **WCF 4.0 services come with default endpoints**
  - One default endpoint per contract/base address combination
  - Assuming you haven't defined any manually
  - If you've defined at least one endpoint, you won't get default endpoints

Default protocol mapping

```xml
<system.serviceModel>
   <protocolMapping>
      <add scheme="http" binding="basicHttpBinding"
         bindingConfiguration="" />
      <add scheme="net.tcp" binding="netTcpBinding"
         bindingConfiguration=""/>
      <add scheme="net.pipe" binding="netNamedPipeBinding"
         bindingConfiguration=""/>
      <add scheme="net.msmq" binding="netMsmqBinding"
         bindingConfiguration=""/>
   </protocolMapping>
   ...
```

Default bindings & behaviors

- **You can also define default binding and behavior configurations**
    - Simply define the binding/behavior *without a name*
    - That binding takes effect for anything not assigned a specific binding
    - Can be defined at *different scopes* within config (e.g. machine.config)

Default binding configuration

```xml
<configuration>
  <system.serviceModel>
    <bindings>
      <basicHttpBinding>
        <binding messageEncoding="Mtom"/> <!-- notice there's no name attribute -->
        <!-- equivalent to -->
        <!-- <binding messageEncoding="Mtom" name=""/> -->
      </basicHttpBinding>
    </bindings>
  </system.serviceModel>
</configuration>
```

Default behavior configuration

```xml
<configuration>
  <system.serviceModel>
    <behaviors>
      <serviceBehaviors>
        <behavior> <!-- notice no name attribute -->
          <serviceMetadata httpGetEnabled="true"/>
        </behavior>
        <!-- equivalent to -->
        <!-- <behavior name="">
          <serviceMetadata httpGetEnabled="true"/>
        </behavior> -->
      </serviceBehaviors>
    </behaviors>
  </system.serviceModel>
</configuration>
```

Common Behavior Configuration

- **Feature from the start.**
- **Additive to other configured behaviors**
- **Only allowed in machine.config**

```xml
<configuration>
  <system.serviceModel>
    <commonBehaviors>
      <serviceBehaviors>
        <serviceMetadata httpGetEnabled="true"/>
      </serviceBehaviors>
    </behaviors>
  </system.serviceModel>
</configuration>
```

Standard endpoints

- **WCF 4 also comes with several "preconfigured" standard endpoints**
    - These cover some of the most common usage scenarios
    - You can simply reuse them as-is without change
- **You refer to standard endpoints by name using the "kind" attribute**
    - Makes it easier to get up and running in certain scenarios

Standard endpoints

Standard endpoint name	Description
mexEndpoint	Defines a standard endpoint for MEX configured with IMetadataExchange for the service contract, mexHttpBinding as the default binding (you can change this), and an empty address.
dynamicEndpoint	Defines a standard endpoint configured to use WCF Discovery within a WCF client application. When using this standard endpoint, an address is not required because during the first call, the client will query for a service endpoint matching the specified contract and automatically connect to it for you.
discoveryEndpoint	Defines a standard endpoint that is pre-configured for discovery operations within a client application. The user needs to specify the address and the binding when using this standard endpoint.
udpDiscoveryEndpoint	Defines a standard endpoint that is pre-configured for discovery operations within a client application using the UDP binding at a multicast address. Derives from DiscoveryEndpoint.
announcementEndpoint	Defines a standard endpoint that is pre-configured for the announcement functionality of discovery. The user needs to specify the address and the binding when using this standard endpoint.
udpAnnouncementEndpoint	Defines a standard endpoint that is pre-configured for the announcement functionality over a UDP binding at a multicast address. This endpoint derives from announcementEndpoint.
workflowControlEndpoint	Defines a standard endpoint for controlling execution of workflow instances (create, run, suspend, terminate, etc).
webHttpEndpoint	Defines a standard endpoint configured with WebHttpBinding and WebHttpBehavior. Use to expose REST services.
webScriptEndpoint	Defines a standard endpoint configured with WebHttpBinding and WebScriptEnablingBehavior. Use to expose Ajax services.

File-less activation

- **In WCF 4, you no longer need physical .svc files to activate services**
    - Instead you can define a ***virtual mapping*** in config

```xml
<configuration>
  <system.serviceModel>
    <serviceHostingEnvironment>
      <serviceActivations>
        <add relativeAddress="Greeting.svc"
             service="GreetingService"/>
      </serviceActivations>
    </serviceHostingEnvironment>
  </system.serviceModel>
</configuration>
```

Summary

- WCF 4 provides more use of defaults. Allows applications to more easily have uniform configuration.

- For your own config, settings collapse into smaller blocks.

- Standard endpoints added for Discovery, MetadataExchange, REST, and WF integration

- Can now host without SVC file.