

Driving Fusebox 5.5

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So, Why are We here?

- a. You haven't worked with MVC in Fusebox and want to see what that is about. (first part of the presentation)
- b. You want to see about the no-xml stuff in Fusebox 5.5

Believe it or not, I'm not talking about either CSS or Accessibility!

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Introduction

- Speaker: Sandra Clark
- Principal Software Developer – SRA International.
- Team Fusebox Member
 - Using Fusebox since Version 1.0

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Today's Agenda

- Discussion of Model View Controller (MVC)
- Fusebox and MVC
- Sample Applications (4 of them!)
 - Old School FB
 - MVC FB
 - MVC FB with a CFC Model
- No-XML FB 5.5
 - 4th Sample App
 - No-xml MVC FB with the same CFC Model

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What is Model View Controller?

- **MVC is a design pattern**
- **MVC is multi-tiered architecture**
 - **Separates the data (model) from the user interface (view)**
 - **De-couples data access and business logic from data presentation and user interaction.**
 - **The de-coupling is supported by introducing an intermediate component: The Controller.**

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The Model

- Model
 - The domain specific representation of the information that the application operates with.
 - Most applications use a database. MVC doesn't specifically mention the db access layer since it is understood to be under or encapsulated within the Model

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The View

- The View renders the model into a shape that is suitable for interaction (usually via a user interface).
- Multiple views can exist for a model for different purposes.

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The Controller

- The Controller is the Traffic Cop, it responds to and processes events (usually from user actions)
- The Controller may invoke changes on the model.

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MVC Strengths

- Cleanly separates Controlling code from display pages.
- Allows a model to be a representation of specific state.
- Allows a single point of entry for all requests
 - Security measures only need to be in one place.
- Easier to maintain.

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MVC Weaknesses

- More difficult to implement from scratch.
- More work to add functionality.
- More files to work with
- Requires more knowledge of applications than “spaghetti code”.

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Fusebox and MVC

- Historically Fusebox has been about separating the presentation and business layers.
- MVC separates the business from the presentation layers as well.
- What's the difference then?

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Fusebox is the Controller

- Circuit.xml is the controller.
 - Think about it as the traffic cop.
 - Figures out what needs to be done
 - Allocates the resources to do it.
 - Makes the calls to the Model and Views

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CFCs are the model

- CFC's are the heavy lifting model.
- Encapsulate the business and data models.
- CFC's can be OOP or not, doesn't matter.

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Sample Applications

- DrivingFB is a sample application, written in many different ways.
 - NON MVC – Traditional Fusebox
 - Fusebox with MVC
 - MVC with a Model composed of CFC's
 - MVC with a More OOP Model using CFC's
 - XML-Less Fusebox as an additional try.
 - Note, this is not the end all. Its an extra

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Non MVC

- Driving FB_1
 - Problems
 - Circuits call each other
 - Harder to reuse fuses.

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Switching to MVC

- Driving FB_2
 - No fuses were changed in the creation.
 - Only the circuits were changed.
 - Calls to <do /> rather than <include />
 - Models don't have to mimic circuits.

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Using CFCs as the Model

- DrivingFB_3
- All model fuses were ported to functions within a cfc
 - Model/car.cfc contains all model/car fuses
 - All functions were reworked to return values.
- Controllers had to be changed to call functions.
 - Also can explicitly show what each call returns.

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XML-less Fusebox

- In 2007, Team Fusebox and Teratech conducted a survey.
 - It turns out many people are still using Fusebox 3 and one of the reasons for that was the perceived barrier to entry of using XML.
 - Fusebox 5.5 allows for a no-xml option.

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No-xml Fusebox is Fusebox light

- No ability to work with plugins
- No ability to work with lexicons
- No ability to nest circuits

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Eliminating the xml files

- In index.cfm or Application.cfc implicit circuits must be enabled
 - FUSEBOX_Parameters.allowImplicitFusebox = true
- Circuits are either subdirectories or CFC's.

controller/a	alias/controller
lias	alias/model
model/alias	alias/view
view/alias	alias

- All aliases must be uniquely named.

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MyFusebox object

- Contains the functions necessary to implement xml-less Fusebox.
 - myFusebox.setSelf("self") - Sets self Variable
 - myFusebox.getSelf() - Gets self Variable
 - myFusebox.setmySelf("self") - Sets myself Variable
 - myFusebox.getmySelf() - Gets myself Variable

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MyFusebox Object

- myFusebox.do(action="", contentvariable="", returnoutput=true/false, append=true/false)
- myFusebox.relocate(url="", xfa="", addtoken=true/false, type="")

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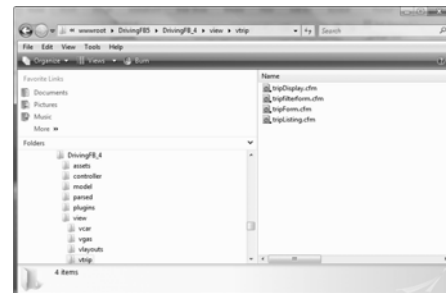
Using cfm files in a Directory as fuseactions

- Name of the directory is the circuit name
- Name of the file is the fuseaction name.
- `<cfset myFusebox.do(action="vtrip.tripDisplay", contentvariable="maincontent")>`

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Using cfm files in a Directory as Fuseactions



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Using Cfcfs as Fuseactions

- CFC Name is the Circuit
- Function name is the Fuseaction.
 - Two arguments are passed to each function
 - myFusebox (contains the MyFusebox object)
 - Event (contains an object which works with the attributes scope)
- Don't put output (Views) in a CFC. Instead use the separate file technique mentioned earlier.

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Event Object – Most used.

- Event.getAllValues() - gets entire attributes structure
- Event.setValue("name", "value") - sets a variable in the attributes structure to the value.
- Event.getValue("name") - Retrieves the requested value from the attribute structure.
- Event.valueExists("name") - Check if a requested value is present.
- Event.xfa("name", "value") - Sets an eXit FuseAction (in variables scope)

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Sample CFC Fuseaction

```
<cffunction name="display">
  <cfargument name="myFusebox">
  <cfargument name="event">
  <cfset event.xfa("carEdit","car.form")>
  <cfset event.xfa("carReturn","car.home")>
  <cfset rs_car =
    application.car.qry_getCar(event.getvalue("carid
    "))>
  <cfset event.setValue("rs_car",rs_car)>
  <cfset request.title = "#rs_car.carName# Details">
  <cfset myFusebox.do(action="vcar.display",
    contentvariable="maincontent")>
</cffunction>
```

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Pre and Post Fuseactions

- Both the directory driven and CFC driven circuits may have pre and postfuseactions.
- Directory driven:
 - prefuseaction.cfm and postfuseaction.cfm
- CFC driven:
 - <cffunction name="prefuseaction"></cffunction>
 - <cffunction name="postfuseaction"></cffunction>
- There is no such thing as CallSuper.

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Summary

- MVC is a design process allowing us to decouple a controller from data and business logic.
- Fusebox works really well with MVC
- Fusebox 5.5 no-xml is Fusebox light.
 - If you want to do large applications, nested circuits or use plugins, use the XML version.

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Resources

- MVC
 - Wikipedia - <http://en.wikipedia.org/wiki/Model-view-controller>
- Fusebox
 - Fusebox Website <http://www.fusebox.org>
 - Fusebox 5.5 Release Documents - <http://trac.fuseboxframework.org/fusebox/export/666/framework/tags/fusebox550/docs/releasenotes.pdf>

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Questions?

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