ColdFusion RDS: From Stress to Success

Charlie Arehart
SysteManage
Founder/CTO

carehart@systemanage.com

Printed: 4/8/2003
Presentation Outline

- What RDS Is, What It Can Do
- Use in CF Studio, HS+, DWMX
- Implications for CFC Browsing
- Common Challenges, Misconceptions
- Setup in Server, Editors
- Security Concerns & Solutions
- Where to Learn More
What Is RDS?

- Remote Development Services
  - Mechanism for accessing resources on a ColdFusion server from within editor
  - HTTP-based communication between editor and server to facilitate development

- Name suggests intention is for remote access
  - But just as useful, perhaps more, for use on own machine or within own network

- Supported in CF 3.1, 4, 4.5, 5, MX
  - CF Studio 3,4,5; Dreamweaver MX
What Can It Do?

- Several features enabled
  - in CF Studio/ HomeSite+
  - And Dreamweaver MX
- Let’s look at each of them...
Use in CF Studio, HS+

- Resource tab>Databases

- Lists all DSNs defined in CF Admin
- Can view all tables, cols, views
  - Click plus signs to expand
- Can drag and drop dsn’s, table, cols into editor
  - DSN creates CFQUERY skeleton
- Can view all data in a given table
  - Double-click table, or right-click>view data
- Can use SQL query builder
  - Right-click on table>new query
Use in CF Studio, HS+ (cont.)

- Resource tab > Files

- Select “Macromedia FTP&RDS” as a drive
- Expand an RDS server
- Will be shown all drives on that server
- Expand to see files in directories
- Can edit files
  - save will save them back to the server
Use in CF Studio, HS+ (cont.)

- Windows Explorer/My Computer

- Select “Macromedia FTP&RDS” as a drive
- Expand an RDS server
- Will be shown all drives on that server
- Expand to see files in directories

- Can right-click
  - Rename, delete, copy (clipboard) any file
  - Edit any file that CF Studio/HS recognizes
Use in CF Studio, HS+ (cont.)

- Internal browse

  - Need to setup “development mappings”
  - “Internal browse” really doesn’t require RDS
  - See “where to learn more” for info on setting up, using development mappings
Use in CF Studio, HS+ (cont.)

- CF Debugger
  - Can single-step through code, etc.
  - Does require RDS connection to server
  - Must have established development mapping (be able to browse) in order to debug
  - Debugger is not supported on CFMX server
  - See “where to learn more” for info on setting up, using debugger
Use in DWMX

- View database metadata info
  - See Applications Panel>Databases
  - Can view tables, views, stored procs
  - See tip later when attempt to use DBs fails
  - Right-click>View Data option scrolls 25 at a time
  - Also supports drag and drop like CF Studio
  - SQL Builder only available by way of bindings, server behaviors features

- DWMX RDS features show only if a CF file is opened and a Site defined
**Tip: When DB features fail**

- Sometimes may get error in DWMX attempting to gather DB metadata
  - Make sure all DSNs in Admin verify
    - Have noticed that if any fail to verify, DWMX may choke on that
  - Have also found that some DSNs that fail to verify can be easily fixed
    - Simply edit and save the DSN in admin
    - Try DB feature in DWMX again
Use in DWMX (cont.)

- Create database code

- See Application Panel>Bindings
- Click “+” to create new Recordset (query)
- To create SQL code
  - Not available “test” and “advanced” options
Use in DWMX (cont.)

- Create database code

- See also Application Panel>Server Behaviors
- Or Insert>Application Objects
- For many other features to generate CF code to manipulate DB
Use in DWMX (cont.)

- Access Remote/Dev Server Files

- See Site>Edit Site>Remote Info>Access>RDS
- Then use Files panel, Site tab>Remote View
- Note also last icon for expand/collapse, to list both remote and local files on one screen
  - Note get, put, check-in/out features there
  - As well as in Site menu
Implications for CFC Browsing

- DWMX CFC browsing also leverages RDS

- In DWMX, see Application Panel>Component Explorer
  - Note: may take a long time, gathers ALL CFCs on server
Implications for CFC Browsing

- Browser-based CFC browsing also leverages RDS

- In browser:
  - Browse URL for a given CFC
  - Or to view all CFCs, browse
    http://[server:port]/CFIDE/componentutils/componentlist.cfm
  - Or to view all CFC packages, http://[server:port]/CFIDE/componentutils/packagelist.cfm
Implications for CFC Browsing (cont.)

- It IS possible to prevent requirement to provide RDS password for CFC browsing
  - Just requires a little modification to delete or replace application.cfm in [webroot] / CFIDE/ componentutils

-See my blog entry of Feb 24, 2003
  -http://cfmxplus.blogspot.com/2003_02_23_cfmxplus_archive.html#90365106

- I offer code to prompt for a new “cfc” password rather than the RDS password
Common Misconceptions

- RDS only for connecting to remote CF servers
  - Just as useful for localhost and lan servers
- RDS grants access to all files & databases on server
  - In CF 4.5, was optional Advanced Security mechanism for individual or group RDS logins
- CF 4.5 Adv. Security was Enterprise only
  - Not true. Sandbox Security was Ent Only
- RDS server settings in CF Studio/HS+ can't be edited or deleted
Common Challenges

- Adding RDS server settings
  - What password, hostname, port, etc.
- Editing, deleting RDS server settings
  - Hard to find out how to do so
- You’re typically not given the RDS password for a server
  - Admin is concerned about security
- CFMX no longer offers RDS sandboxing
- Must provide RDS password to browse CFCs
Setup in Server

- In CFMX, RDS is enabled as feature of CFMX server, not own service
  - See later “security” section to disable
- In CF3.1, 4, 5, can be enabled either as service or program depending on OS
- In both, define password in admin
  - More on adv sec approach in CF 4-5, later
Setup in Server: CFMX
Setup in Server: CFMX for J2EE

- Special Sun patch needed to enable RDS on CFMX for J2EE
  - See “Installing ColdFusion MX for J2EE on the Sun J2EE 1.3.1 Reference Implementation on Windows”
  - See also “Installing ColdFusion MX for J2EE on other J2EE Servers”
  - Similar technotes for different J2EE servers
Other Server Setup Issues

- For Unix/ Solaris/ Linux and for 4.5, see “hot fix” available for RDS
  - http://www.macromedia.com/go/suppissues_cf_hotfixes
Setup in CF Studio, HS+

- During install, may be prompted to setup connection to RDS server
- After install, can add RDS servers using:
  - Database tab
  - Options>settings>browse>
    development mappings
    - Or Debug>development mappings
    - Or Alt-M
CF Studio, HS+: Add RDS Server
CF Studio, HS+: RDS Server Settings

- Pay attention to needed settings
  - In hostname, just enter domain name or IP
    - No http:// or any other /’s
    - For your own machine, use localhost or 127.0.0.1
  - For port, in CFMX if using built-in web server, set it to 8500
  - Can select SSL if needed
  - For security fields, typically will enter only a value for “password”
    - And it would be the RDS password defined in Admin
    - More on security options later
CF Studio, HS+: Edit RDS Server Settings

- Cannot edit or delete RDS server settings using those interfaces
  - Must use Files tab or Windows Explorer/ My Computer
    - Then, at same level as hard drives, find “Macromedia FTP & RDS”
      - Or in CF Studio 4.5 and earlier, “Allaire FTP&RDS”
    - Can then right-click on server, choose properties (or delete)
      - Can also use “administer” to open CF Admin
CF Studio, HS+: Edit RDS Server Settings (cont.)
CF Studio, HS+: Edit RDS Server Settings (cont.)
Setup in Dreamweaver MX

- Must create a “site”
  - And in that site, create “testing server”
- Then with a CF page open, choose an option that leverages RDS
  - Such as Application panel>Databases
  - If first time doing so in this site, will be prompted to enter RDS login info
    - This is the Admin RDS password
Security Concerns: Outsiders

- Potential unauthorized access by outsiders
  - Anyone with CF Studio/ HS+/ DWMX can attempt to connect to your server
  - Be sure to have Admin RDS password set
    - Never disable password on a network-connected server
    - Don’t choose easy passwords like “rds”, “admin”
  - Consider adding Web Server security to restrict access to / CFIDE/ main/ide.cfm
    - Which is the location where editors connect to RDS
Security Concerns: Insiders

- Potentially too broad access for insiders
  - Sadly, the default for RDS security on all CF servers is a single RDS password
    - All developers who know that can see all DSNs and all files/dirs on entire server
    - Really is inappropriate for any non-localhost server
      - Not just commercial hosting provider
      - But also for shared departmental server if multiple developers
Security Solutions

- In CF 4-5, can assign individual or group logins for RDS
  - Supported by Advanced Security
    - Does NOT require Enterprise
    - Does NOT require use of Adv Sec for applications. Can be just for RDS
  - Turn on Advanced Security option
    - then configure “security server”, “user directory”, “security context”, “resources to protect”
    - Then turn on “Use ColdFusion Studio Authentication”
    - Then CF Studio/ HS+ users should change to use username and password
      - Bummer: DWMX only prompts for password

www.systemanage.com       our practice makes you perfect
Security Solutions

- Disabling RDS entirely
  - If security concerns are too great, can simply disable RDS entirely
    - Recommended for production servers
  - Don’t just turn off RDS password in CF Admin, though!
  - Need to disable the RDS capability for the server...
Security Solutions

- Disabling RDS entirely (cont.)
  - In CF 3.1, 4, 5, stop the RDS service and set it to “manual” in Services panel
  - In CFMX, open WEB-INF\web.xml
    - Comment out RDSServlet mapping
  - Beware: disabling RDS will also disable “browse” applet in CF Admin
    - Happens in CFMX as well despite what technote says
Where to Learn More

- Using DB, debug, browse, dev mapping tools in CF Studio/ HS+
  - See manual included in editor Help>Open Help References Window
    - Includes manual, “Using ColdFusion Studio” or “Using HomeSite+ for Dreamweaver MX”
    - Great resource that many never see
- Especially see chapters:
  - Configuring Browsers and Servers
  - Accessing Data Sources
  - Debugging Application Code
Where to Learn More (cont.)

- Using features in DWMX
  - See Help>Using Dreamweaver MX
  - Especially chapters:
    - Dreamweaver Basics
    - Preparing to Build Dynamic Sites
    - Making Pages Dynamic
Where to Learn More (cont.)

- Administration, Security
  - CF 5
    - Installing and Configuring ColdFusion Server, chapter 5 "Basic ColdFusion Server Administration"
    - Advanced ColdFusion Administration, chapter 3 “CF Security”
    - Online at http://livedocs.macromedia.com/cf50docs/dochome.jsp
  - CFMX
    - Basic ColdFusion MX Administration, chapter 2
    - Online at http://livedocs.macromedia.com/cfmxdocs/dochome.jsp
Where to Learn More (cont.)

- My resources
  - More about HomeSite+
    - See my blog entries (cfmxplus.blogspot.com)
    - Mar 03, Jan 03, Oct 02, and Sep 27 02
  - More about DWMX
    - See my blog entries
    - Sep 27 02, Oct 16 02, Nov 12 02, Nov 17 02, Nov 24 02,
      Dec 20 02
Where to Learn More (cont.)

- My resources (cont.)
  - CF5 Security Config
    - Toward Better CF Server Administration – Part 2: Security
      - http://www.sys-con.com/ coldfusion/ article.cfm?id=426
  - CFMX Security Config
    - ColdFusion Security, Part I: Understanding
      Sandbox/ Resource Security
    - Part 2: Setting Up Sandbox/ Resource Security
Contact Information

- Charlie Arehart
  - carehart@systemmanage.com
  - http://www.systemmanage.com
  - 301 604 8399

- Available for training (public and on-site) and short-term, on demand consulting