

RShiny at Qatar Re -- A business case

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Insurance Data Science Conference





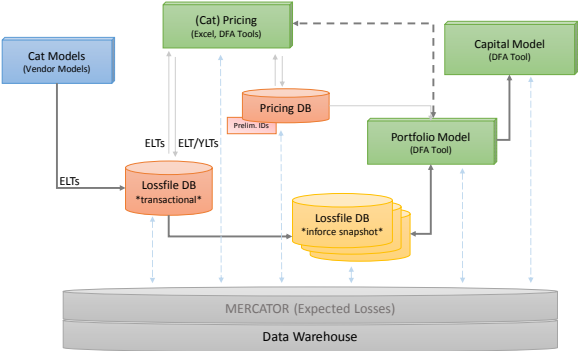
1. Introduction
2. Motivation
3. RShiny Application (Work in progress)
4. Q & A



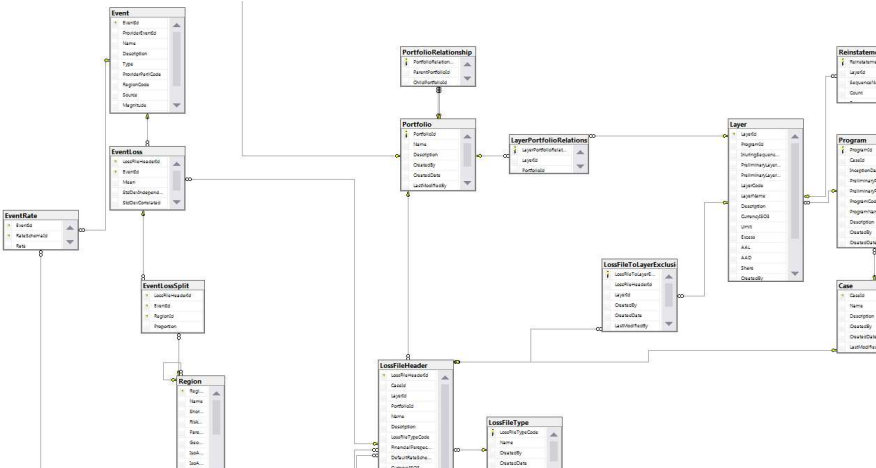
- Variety of loss files (Clients/Brokers, Actuarial, CPA)
- Different formats, different storage locations
- Loss File Data Base as central point for all formats
- RShiny interface through which people can easily access the information



Cat → Portfolio → Capital Model



Lossfile DB Structure





Results:

- Automated portfolio rollup
- Portfolio impact (case by case; marginal impact)
- Input to capital model
- Portfolio optimization

Components:

- Central loss file database
- Pricing tool
- Portfolio modelling tool
- Interfaces to:
 - Data Warehouse
 - Cat Models from various vendors
 - Mercator
 - Pricing Database



QATAR RE Cat Portfolio DB

Loss File DB Management

Import from RiskLink Not Working Yet

Server Name:
01-tst.db.qregroup.net

Portfolio ID:
388

Loss File Header ID:
83328//Chile - Earthquake

Retrieve Portfolio ELT

Retrieve Lossfile ELT

Calculate EP

Lossfile Database Management Tool

Lossfiles | Portfolio ELT | Lossfile ELT | EP Curve

Copy | Excel | PDF | Print | Column visibility

Search:

PortfolioId	Name	Description	CreatedBy	CreatedDate	LastModifiedBy	LastModified
119	Portfolio 10-2017 ReRun v17 run1	Portfolio 10-2017 ReRun v17 run1 - Dec 19 2017 6:09PM	QREGROUPiazbindenadm	2017-12-19 18:09:17.403	QREGROUPiazbindenadm	2017-12-19 18:09:17.403
120	TEST Australia EQ Import	TEST Australia EQ Import - Dec 22 2017 7:55AM	QREGROUPiazbindenadm	2017-12-22 07:55:54.707	QREGROUPiazbindenadm	2017-12-22 07:55:54.707



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Lossfile Database Management Tool

Lossfiles Portfolio ELT Lossfile ELT EP Curve

Copy Excel PDF Print Column visibility Search:

EventId	ProviderEventId	Rate	Mean	StdDevIndependent	StdDevCorrelated	ExposedValue
618084	2680706	0.0000051037518753928	38,503,995.50	531,667.22	6,241,277.96	113,793,370.18
618080	2680702	1.453292376604e-7	38,174,843.32	449,958.71	11,062,545.14	113,900,872.19
618081	2680703	5.171433364761e-7	37,616,360.45	454,958.00	11,319,687.91	113,860,748.34
618082	2680704	0.0000013375762372517	37,435,604.52	456,277.69	11,406,499.22	113,860,748.34
618079	2680701	0.0000111012063045187	37,110,764.77	547,185.53	6,993,774.38	112,566,614.86
618083	2680705	0.0000103606432209221	37,020,569.90	460,321.17	11,610,746.99	113,853,747.23
618075	2680697	3.161066389545e-7	36,820,116.77	453,039.00	11,560,748.32	113,150,525.93



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Lossfile Database Management Tool

Lossfiles Portfolio ELT Lossfile ELT EP Curve

Copy Excel PDF Print Column visibility

Search:

Return Period	Loss
10,000.00	57,897,862.81
5,000.00	54,677,966.04
1,000.00	46,023,488.83
500.00	41,363,016.19
250.00	35,499,197.38
200.00	33,157,502.66
100.00	22,949,222.91

The screenshot displays the QATAR RE Lossfile Database Management Tool interface. The main content area is titled "Copy from RMS to Lossfile DB" and shows a "List of Portfolios" table. The table has columns for PortfolioID, Name, Description, CreatedBy, CreatedDate, LastModifiedBy, LastModifiedDate, and ContainedLossFiles. The table contains 17 rows of data, with the first row being a header row. The table is currently showing 1 to 12 of 171 entries.

PortfolioID	Name	Description	CreatedBy	CreatedDate	LastModifiedBy	LastModifiedDate	ContainedLossFiles
119	Portfolio 10-2017 ReRun v17 run1	Portfolio 10-2017 ReRun v17 run1 - Dec 19 2017 6:09PM	QREGROUP\azbindenadm	2017-12-19 18:09:17.403	QREGROUP\azbindenadm	2017-12-19 18:09:17.403	794
120	TEST Australia EQ Import	TEST Australia EQ Import - Dec 22 2017 7:55AM	QREGROUP\azbindenadm	2017-12-22 07:55:54.707	QREGROUP\azbindenadm	2017-12-22 07:55:54.707	0
125	New Test Import	New Test Import - Dec 22 2017 9:02AM	QREGROUP\azbindenadm	2017-12-22 09:02:49.003	QREGROUP\azbindenadm	2017-12-22 09:02:49.003	39
134	Portfolio 10-2017 v17 run2 (incl AU EQ)	Portfolio 10-2017 v17 run2 (incl AU EQ) - Dec 22 2017 9:48AM	QREGROUP\azbindenadm	2017-12-22 09:48:22.6	QREGROUP\azbindenadm	2017-12-22 09:48:22.6	830
135	TEST Regional Import	TEST Regional Import - Dec 28 2017 4:35PM	QREGROUP\azbindenadm	2017-12-28 16:35:57.22	QREGROUP\azbindenadm	2017-12-28 16:35:57.22	4
136	TEST Regional Import	TEST Regional Import - Dec 28 2017 4:41PM	QREGROUP\azbindenadm	2017-12-28 16:41:28.48	QREGROUP\azbindenadm	2017-12-28 16:41:28.48	3
137	Portfolio 10-2017 v17 3	Portfolio 10-2017 v17 3 - Dec 28 2017 5:33PM	QREGROUP\azbindenadm	2017-12-28 17:33:35.753	QREGROUP\azbindenadm	2017-12-28 17:33:35.753	831
138	Portfolio 10-2017 v17 3	Portfolio 10-2017 v17 3 - Dec 28 2017 9:16PM	QREGROUP\azbindenadm	2017-12-28 21:16:00.02	QREGROUP\azbindenadm	2017-12-28 21:16:00.02	267
163	Portfolio 10-2017 v17 3	Portfolio 10-2017 v17 3 - Feb 13 2018 10:04AM	QREGROUP\azbinden	2018-02-13 10:04:31.887	QREGROUP\azbinden	2018-02-13 10:04:31.887	2
169	Portfolio 10-2017 v17 3	Portfolio 10-2017 v17 3 - Feb 13 2018 3:49PM	QREGROUP\azbinden	2018-02-13 15:49:00.227	QREGROUP\azbinden	2018-02-13 15:49:00.227	24
170	Copy Destination	TestDescription	QREGROUP\azbinden	2018-02-13 16:54:38.227	QREGROUP\azbinden	2018-02-13 16:54:38.227	14
171	Testing Split Import	Testing Split Import - Feb 14 2018 9:20AM	QREGROUP\azbinden	2018-02-14 09:20:44.06	QREGROUP\azbinden	2018-02-14 09:20:44.06	4

RShiny Production

The screenshot displays an RShiny application interface. The main content area shows a table with 10 columns: ID, Name, Description, Date, Group, and Count. The table contains 10 rows of data, including entries like 'TEST Australia EQ Import', 'New Test Import', and 'Portfolio 10-2017 v17 run2 (incl AU EQ)'. The sidebar on the left contains several sections: 'Analysis Name:' with a text input field; 'Financial Perspective Source:' with a dropdown menu set to 'PERSPCODE' and a 'Show Contained Models' button; 'Enter Portfolio Name' and 'Enter Portfolio Description' with text input fields; 'Portfolio Names:' with a text input field containing '113/Portfolio 10-2017 ReRun v17.rml'; 'Target Financial Perspective:' with a dropdown menu set to 'RENET'; and 'Perspective Code:' with a dropdown menu set to 'RN - Reinsurance Net Loss'. At the bottom of the sidebar, there is a 'Load RML Analysis to Lossfile DB' button and a 'RStudio Browser' link. The top of the application shows a browser window with the URL '127.0.0.1:7938' and a 'Help improve Opera by sending feature usage information' notification.

ID	Name	Description	Date	Group	Count
120	TEST Australia EQ Import	TEST Australia EQ Import - Dec 22 2017 7:55AM	2017-12-22 07:55:54.707	QREGROUP\azbindenadm	0
125	New Test Import	New Test Import - Dec 22 2017 9:02AM	2017-12-22 09:02:49.003	QREGROUP\azbindenadm	39
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138	Portfolio 10-2017 v17 3	Portfolio 10-2017 v17 3 - Dec 28 2017 9:16PM	2017-12-28 21:16:00.02	QREGROUP\azbindenadm	267
163	Portfolio 10-2017 v17 3	Portfolio 10-2017 v17 3 - Feb 13 2018 10:04AM	2018-02-13 10:04:31.887	QREGROUP\azbinden	2
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170	Copy Destination	TestDescription	2018-02-13 16:54:38.227	QREGROUP\azbinden	14
171	Testing Split Import	Testing Split Import - Feb 14 2018 9:20AM	2018-02-14 09:20:44.06	QREGROUP\azbinden	4

Showing 1 to 12 of 130 entries

Previous 1 2 3 4 5 ... 10 Next



1. One central place for all lossfiles
2. Use RShiny to move lossfiles to and from the database and calculate various statistics
3. With RShiny we move from a few selected users to many users
4. Inter departmental development, user needs can be satisfied better through RShiny

Thank you!

Marc Rierola

