

4i17™

by 

presentation of the solution

Our IFRS 17 Solution

4actuaries.com

4i17™

is cloud based web application developed in django & python. It can be easily integrated in your reporting process.



django

Here are 4 main features of the solution.



Preparation of disclosures and interactive diagrams.



It has a replica in excel therefore you can easily understand & recalculate the numbers produced by it.



It can be customized for your needs and methodology. It is also fully flexible, so that you may integrate your own new modules or process.



It prepares automatically the descriptive Word reports, which you can download & edit.



The **4i17™** easily fits into client's existing **IT infrastructure.**



This is the **methodology** implemented.

The ready methodology is waiting for you. Here is the brief overview:



Measurement models

All 3 approaches: GMM, PAA & VFA



Rollforward & bookings

Rollforwards & bookings in PnL, CSM & OCI
Full balance sheet modelling



Measurement purpose & timing
initial & subsequent measurement
different model time steps



OCI for VFA

based on proportion of LIC to FCF
Based on coverage units



OCI for GMM

When cashflows vary significantly on
financial risk and when they do not.



3 methods of measurement of assets

FVTPNL
FVTOCI with „recycling” of realized gains/losses
FVTOCI without „recycling” of realized gains/losses



Reinsurance held modelling

Negative CSM
Separate presentation in disclosures
booking of changes in non-performance risk of reinsurer



VFA modelling specifics

hedging of variable fee option
VFA specific disclosures



2 Loss Component Reversal Methods

based on proportion of LIC to FCF
based on coverage units



This is how required disclosures module looks like.

All the disclosures which can be filtered and downloaded.

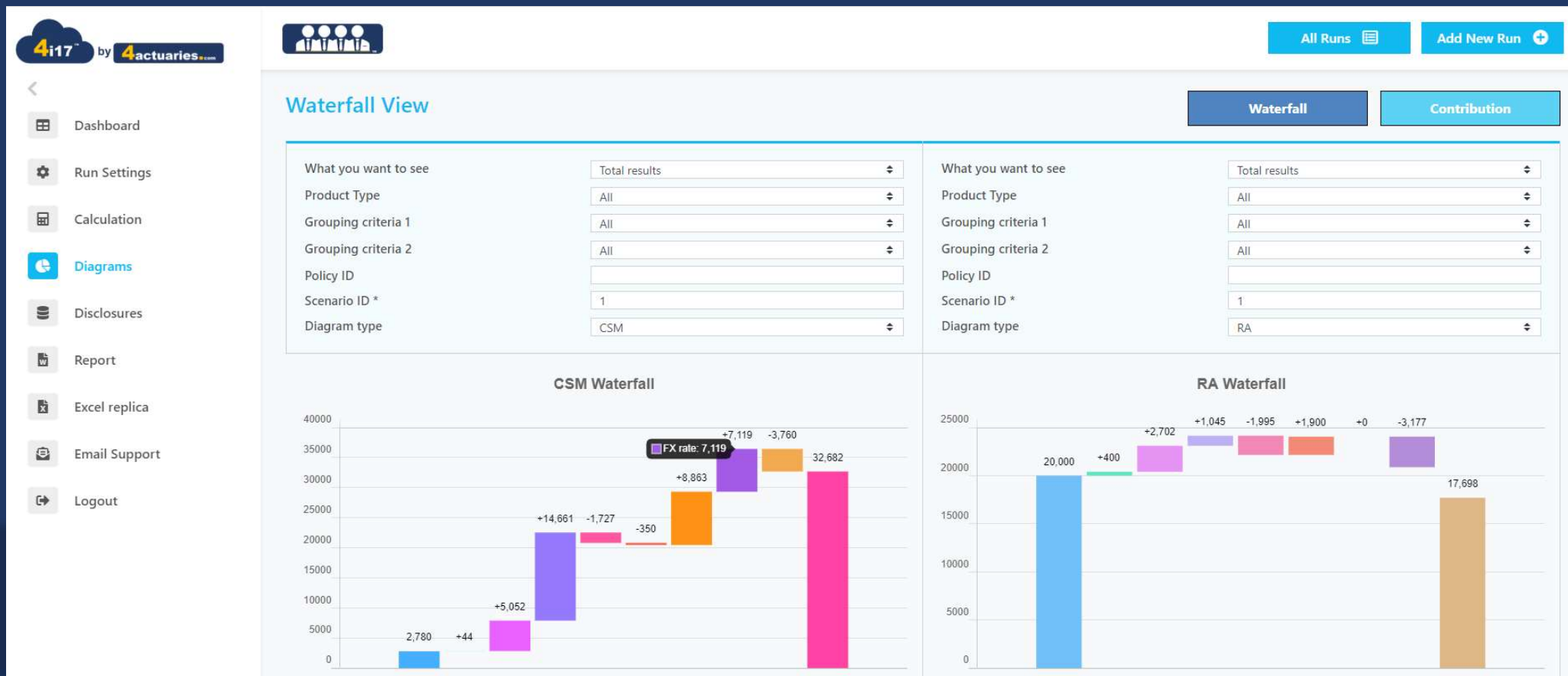
All Runs
Add New Run

Income Statement
Balance Sheet
D100
D101
D106
D107_108
D109
D110
D111

Reconciliation of the measurement components of insurance contract balances (par. 101)	LFIC	TVOG	BEL	Risk adjustment	Contractual Service Margin	Total
Insurance contract liabilities BOP	24,390.39	22,980.77	478,500.00	45,856.46	16,009.00	587,736.62
Insurance contract assets BOP	0.00	0.00	0.00	0.00	-521.00	-521.00
Net balance BOP	24,390.39	22,980.77	478,500.00	45,856.46	15,488.00	587,215.62
Changes related to current service	-	-	-37,065.00	-13,901.82	-7,588.98	-58,555.80
CSM recognised for the service provided	-	-	-	-	-3,258.98	-3,258.98
Risk adjustment recognised for the risk expired	-	-	-	-13,901.82	-	-13,901.82
Experience adjustment: expected outgo excl. non-distinct investment component	-	-	-131,165.00	-	-	-131,165.00
Experience adjustment: expected Non-distinct investment component	-	-	-18,520.00	-	-320.00	-18,840.00
Experience adjustment: premiums	-	-	117,320.00	-	690.00	118,010.00
Experience adjustment: acquisition expenses	-	-	-4,700.00	-	-4,700.00	-9,400.00
Changes related to future service		916.32	187,421.78	20,151.59	1,655.67	210,145.36
Contracts originally recognised in the period	-	1,139.98	46,968.71	4,833.50	-52,942.19	0.00
Changes in estimates reflected in the CSM		-223.66	140,453.07	15,318.09	-155,547.50	0.00
Changes in estimates that result in onerous contract losses		-	-	-	210,145.36	210,145.36
Changes related to past service	203.79	-	-	-	-	203.79
Adjustments to liabilities for incurred claims	203.79	-	-	-	-	203.79
Insurance service expense from change in liabilities	203.79	916.32	150,356.78	6,249.77	-5,933.31	151,793.35

This is how our **interactive diagrams** look like.

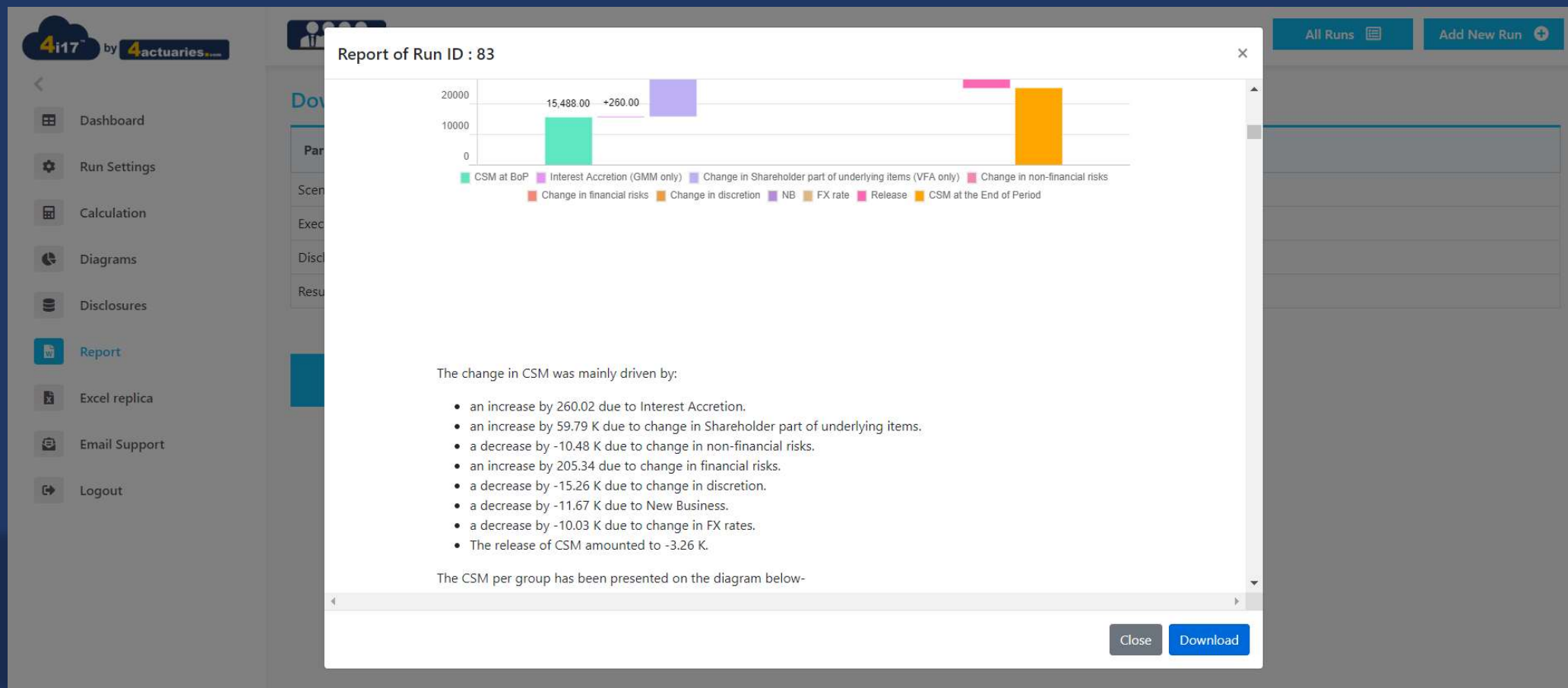
Intuitive filters and clear diagrams..







This is how generation of **automatic reports** look like.

Users generate HTML report online which can be then downloaded and edited in word .





This is how Excel Replica functionality works:


In this view users push the input used for calculations in the app into Excel Replica and download it.





<


 Dashboard


 Run Settings


 Calculation


 Diagrams

 Disclosures

 Report

 Excel replica


 Email Support

 Logout

Excel Replica

Parameter	Value
First Goc to copy	<input type="text" value="1"/>
Last Goc to copy	<input type="text" value="100"/>
First Scenario to copy	<input type="text" value="1"/>
Last Scenario to copy	<input type="text" value="2"/>

Download excel replica





This is how Excel Replica is built:

Now users can follow the calculations in excel and recalculate if need. Formulas are structured in a nice way.

AutoSaveOff

4i17 Excel Replica

Search

olgierd baranski

FileHomeInsertDrawPage LayoutFormulasDataReviewViewDeveloperHelpSpreadsheetConverter

Clipboard

Font

Alignment

Number

Styles

Cells

Editing

Ideas

Share

Comments

SUM

X

✓

fx

=IF(AND(IsInitMeas?="NO"; approach <> "PAA"); D48+IF(approach="VFA"; 0; F10); 0)

AB

C

D

E

F

G

H

I

44

45

46

47

48

49

50

51

52

53

54

55

56

57

58

59

60

61

62

63

64

65

66

67

68

69

70

CSM /Loss Component roll-forward

Net CSM	Net CSM at BoP	net CSM after Interest Accretion (GMM only)	net CSM after Change in Shareholder part of underlying items	Net CSM after Change in non-financial risks	Net CSM after Change in financial risks	Net CSM after change in discretion
	18,00	"PAA"; D48+IF(approach="VFA"; 0; F10); 0)	143,00	237,00	427,00	618,00
CSM	CSM at BoP	CSM after Interest Accretion (GMM only)	CSM after Change in Shareholder part of underlying items (VFA only)	CSM after Change in non-financial risks	CSM after Change in financial risks	CSM after change in discretion
	18,00	18,00	143,00	-	-	618,00
LC	LC at BoP	LC after Interest Accretion (GMM only)	LC after Change in Shareholder part of underlying items (VFA only)	LC after Change in non-financial risks	LC after Change in financial risks	LC after change in discretion
	-	-	-	237,00	427,00	-
RA	RA at BoP	RA after Interest Accretion	RA after Change in non-financial risks	RA after Change in financial risks	RA after change in discretion	RA after NB
	100,00	100,00	100,00	290,00	195,00	100,00

PAA calculations

LFRC	LFRC at BoP	Premium Received	Acquisition costs - amortization	Adjustment to financing component	Amortization of LFRC	Investment component paid or transferred to LFRC
	-	-	-	-	-	-
Loss	Premium Received	Acquisition costs - amortization	LFRC	Loss booked		
	-	-	-	-		

Income Statement

Incurring Premiums relating to current period	Expected Claims excl. LC	Expected Expenses excl. LC	Amortization of Acquisition Expenses	CSM Release	RA Release excl. LC
---	--------------------------	----------------------------	--------------------------------------	-------------	---------------------

This is how **Developer Mode** looks like:

You can change the heart of the application by uploading the new version of the code.



Download new version of the code
together with a small programme which „simulates“ the app on your local PC



Upload new version of the code
When running the model, specify which version of the code you want to use. The code used for production runs must be reviewed.



This is how the **Heart of the App** looks like:

It gives you full flexibility. You can use our methodology, extend it or introduce your own.

```
988 return res
989
990 def csm_release_rolloffwd(self):
991     if (self.isinitmeas == 'NO' and self.approach != 'PAA' and self.csm_at_bop() != 0):
992
993         calc = max(0, min(1, (self.gocRecord['Coverage Units BoP'] - self.gocRecord['Coverage Units EoP']) /
994             self.gocRecord['Coverage Units BoP']))
995         res = -self.csm_after_FX() * calc
996     else:
997         res = 0
998     return res
999
1000 def csm_eop(self):
1001     if self.approach == 'PAA':
1002         res = 0
1003     else:
1004         if self.isinitmeas == 'NO':
1005             if self.isreinsheld == 'NO':
1006                 res = max(self.csm_after_FX() + self.csm_release_rolloffwd(), 0)
1007             else:
1008                 res = self.csm_after_FX() + self.csm_release_rolloffwd()
1009         else:
1010             if self.isreinsheld == 'YES':
1011                 res = (-self.bel_eop() - self.ra_eop() - self.TVOG_EoP)
1012             else:
1013                 res = max(-self.bel_eop() - self.ra_eop() - self.TVOG_EoP, 0)
1014     return res
1015
1016 #####
1017 ##### LC ROLLFORWARD #####
1018 #####
1019 def lc_bop(self):
1020     try:
```

The code is in python 3.8

It is written in a clear way, so that it is easy to understand & modify by actuaries



If the code works locally, it works online as well.

We provide clear instructions which variables cannot be modified (if they are „connected” to diagrams/disclosures).

It takes 5 mins to install all required libraries & python.


We provide clear instructions with videos & printscreens.





Unlimited* number of users

In the solutions offered by competitors you pay extra fee for each user.
In 4i17 you can have as many users as you wish. You can quickly add them on your own with our user-friendly interface.

 [Api Documentation](#) [All Runs](#) [Add New Run](#)

All users

[Change Password](#) [Invite User +](#)

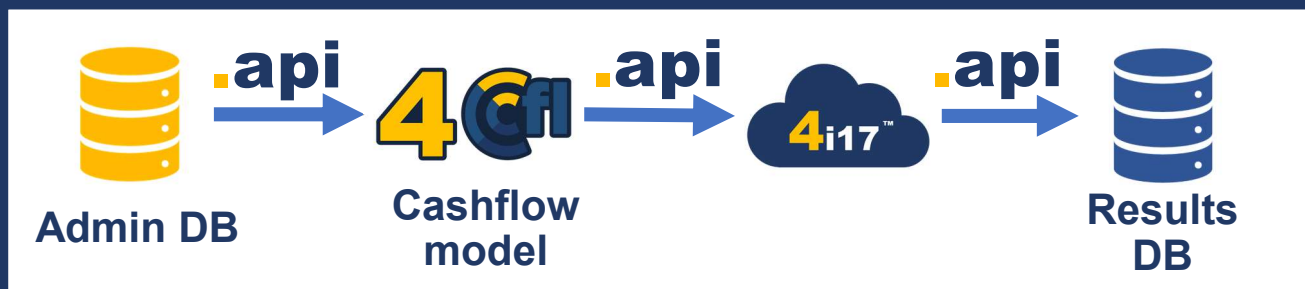
User added Successfully!!

User	Email	Agent Token	Organisation	User Type	Role	Actions
Insurer	admin@insurer1.com	hrSsLzspjLYZz7rY7JvuiB4t	Insurer01	Producer	Admin	Delete Change role Refresh Agent token
John	producer@insurer1.com	-----	Insurer01	Producer	Admin	Delete Change role Refresh Agent token
Kate	developer@insurer1.com	-----	Insurer01	Developer	Admin	Delete Change role Refresh Agent token

*The number of users that can make runs online simultaneously depends on your cloud set-up.

Automation with API

4i17 can be **integrated** into any reporting **process** thanks to the **API**.



In standard version we provide ready scripts in **node js** & **python**, but we can also prepare it in **any** other programming **language** on request.

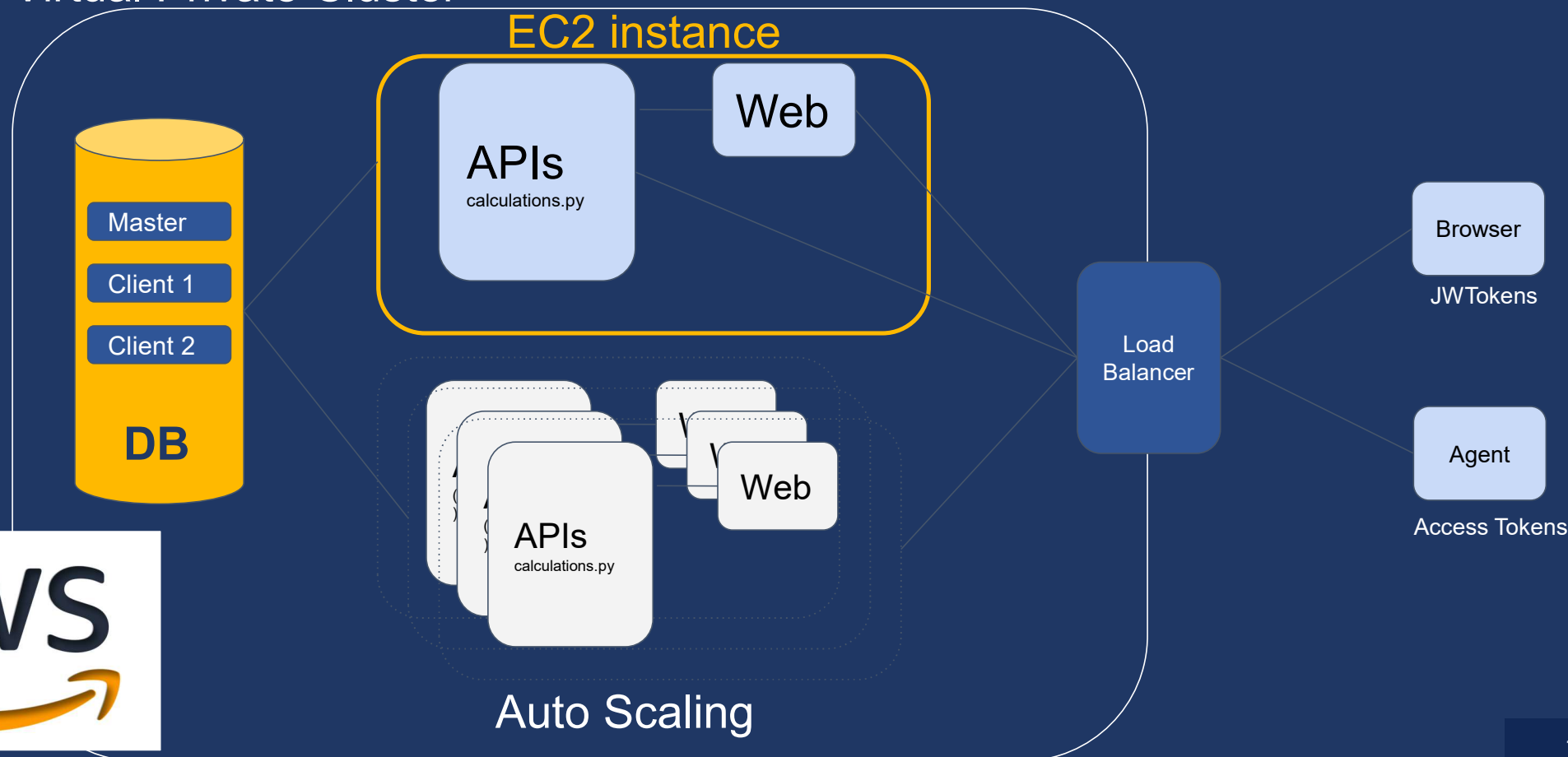


Architecture of 4i17.

We use **AWS**, but we can also deploy it **on-premise**.

The default option is **multi-tenant solution**, but clients can have the **single-tenant** application if needed.

Virtual Private Cluster





Free **access** to



4actuaries.com

The **access** to our **actuarial software training** platform is **included** in the price of the solution.

Select product

4i17

4cfl

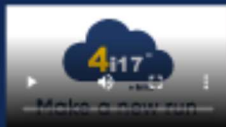
Disclosures



Download
related files.

Download

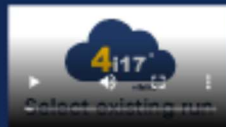
Add a new run



Download
related files.

Download

Select existing run



Download
related files.

Download

Diagrams mode



Download
related files.

Download

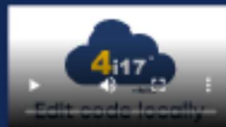
Excel Replica Intro



Download
related files.

Download

Edit code locally



Download
related files.

Download

Admin



Download
related files.

Download

Development mode



Download
related files.

Download



Looking forward to hear from **you!**

