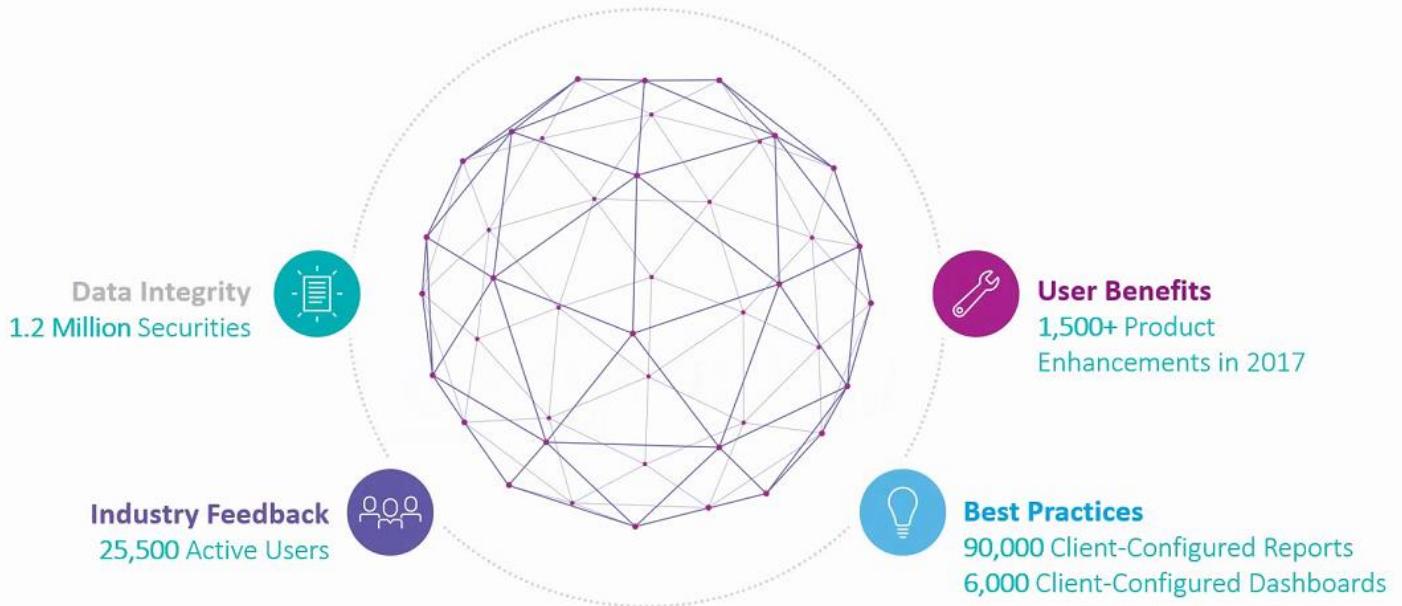


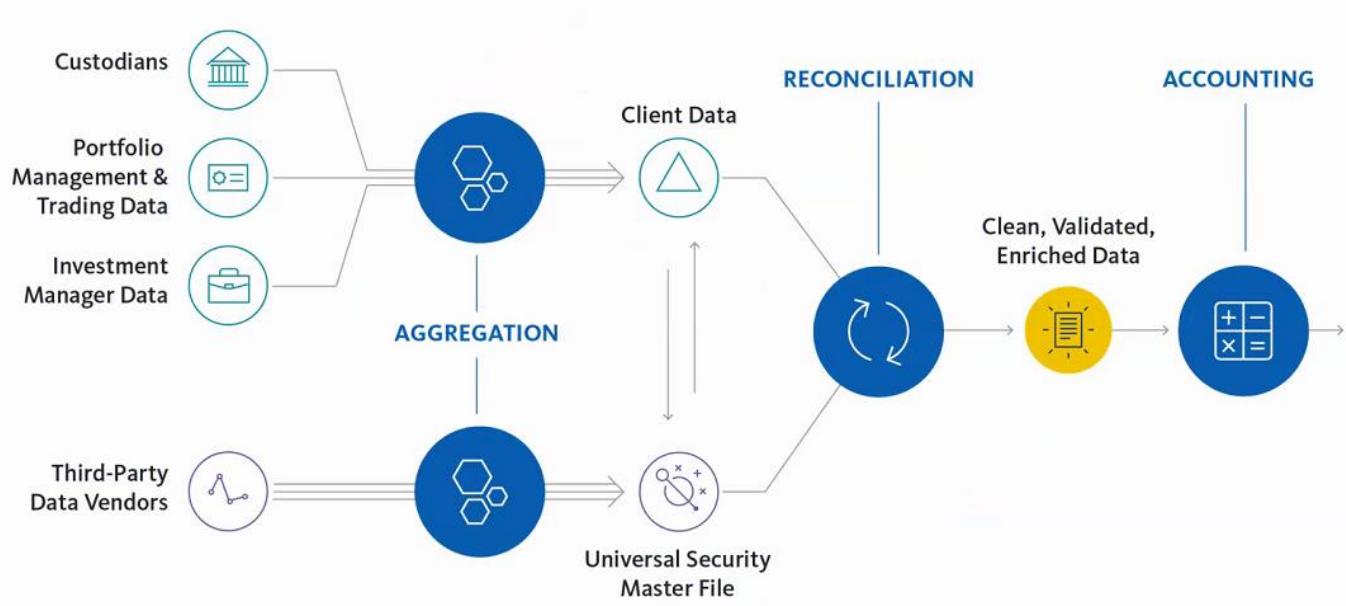
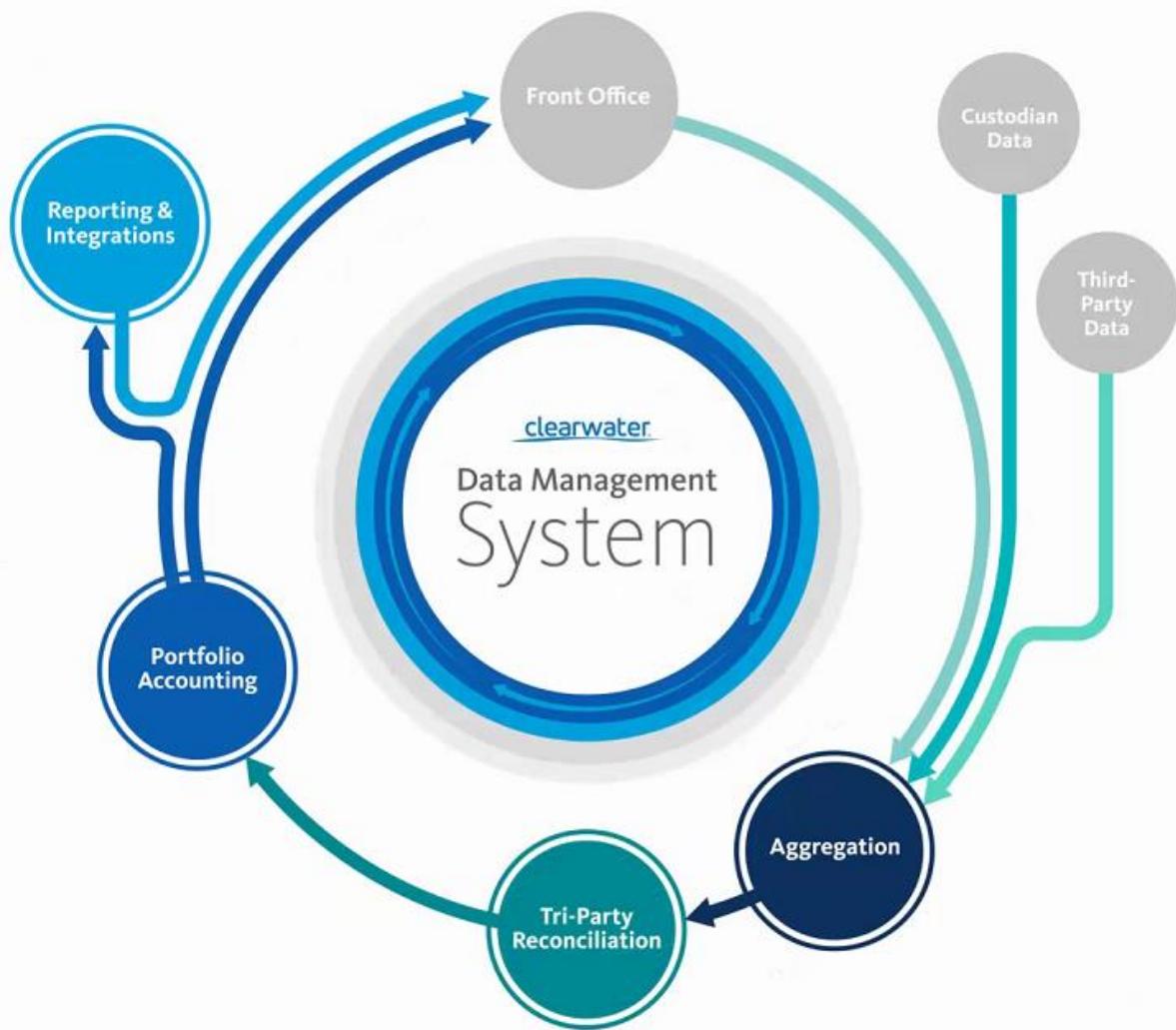


Clearwater Network Effect

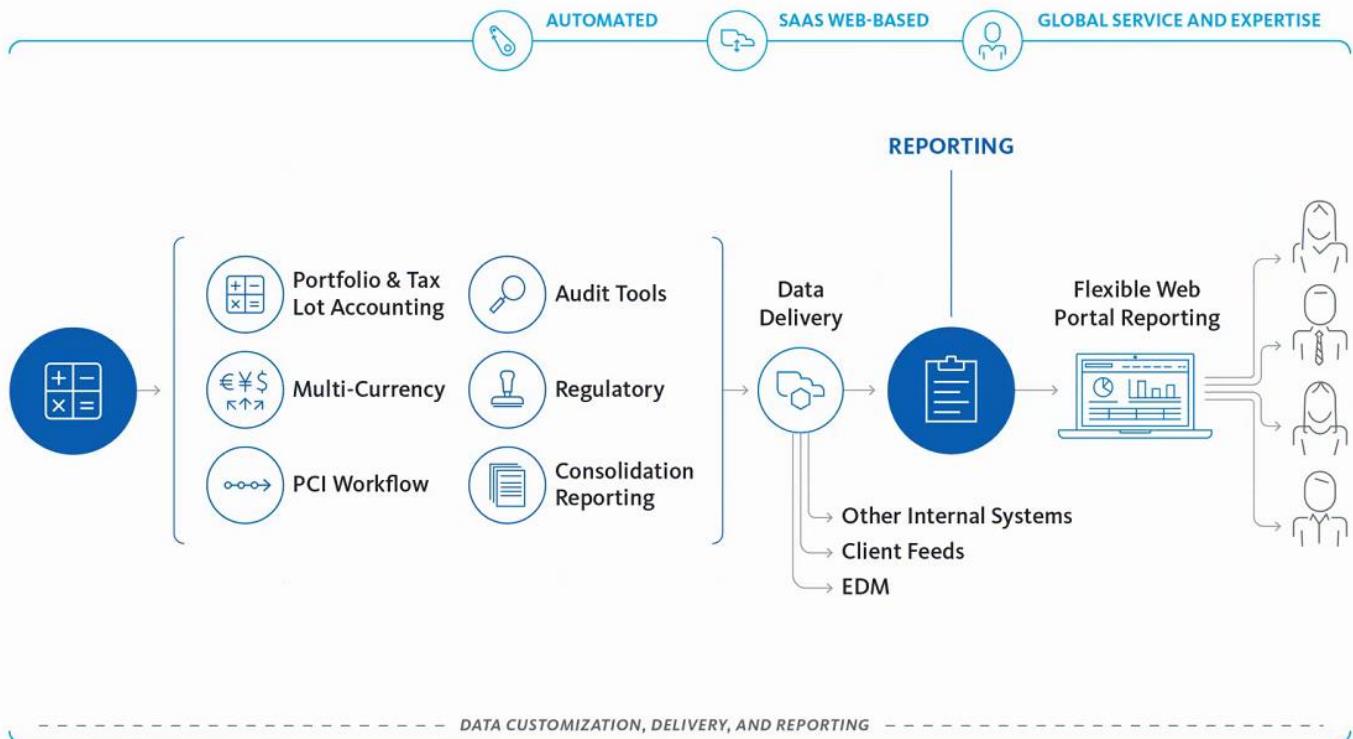


Multi-tenant → No issue with versioning, instead evolutionary

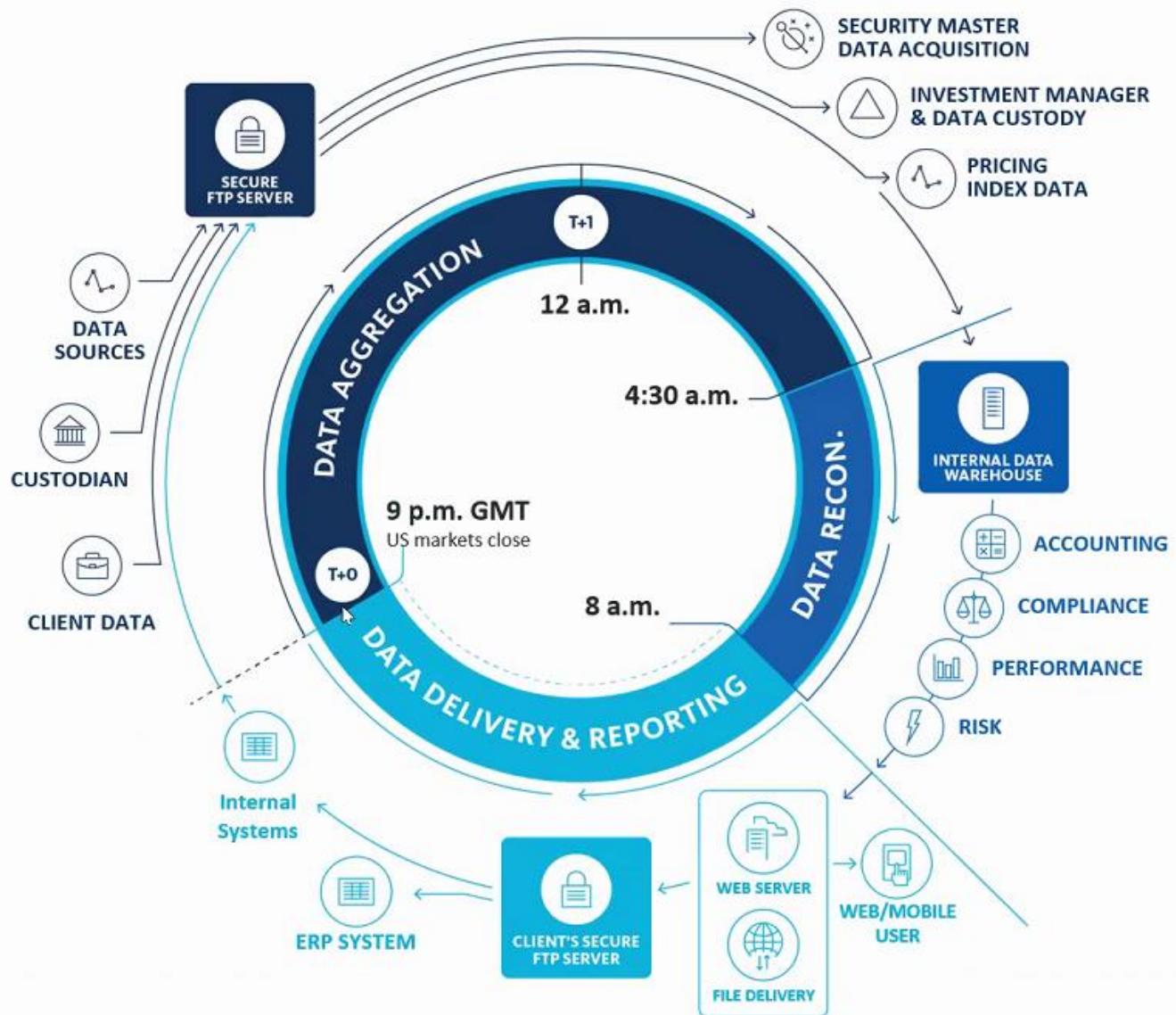
50% of staff on R&D + Compliance/Regulatory → CW very knowledgeable for many years



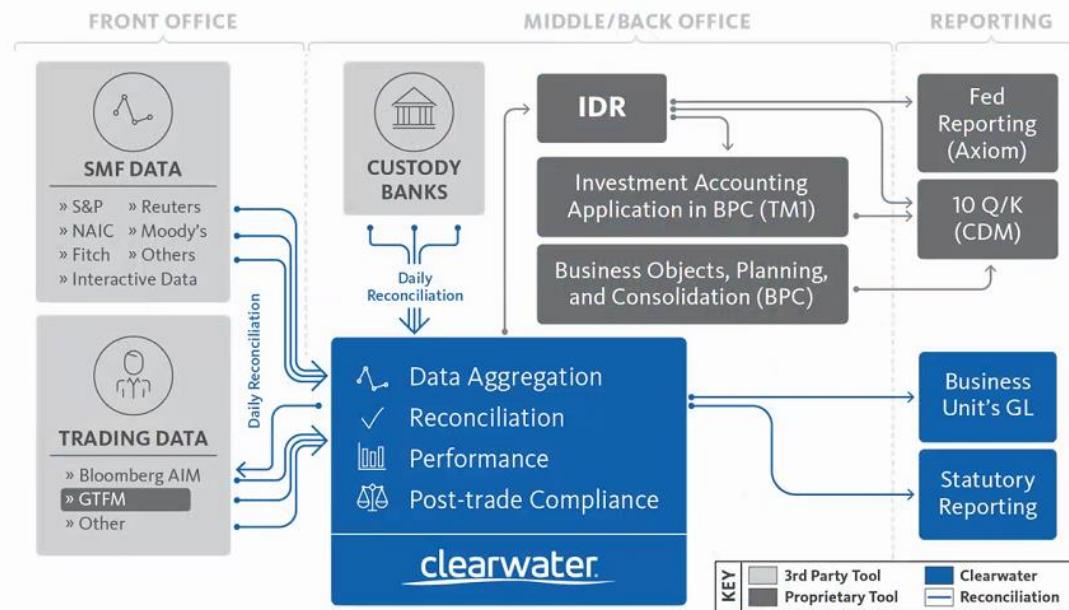
AIG: aggregate on private equities from FrontOffice , based on 3rd party vendor's security master file



WEB-based reporting ➔ CW unable to process incorrect data



AIG and Clearwater Infrastructure



PROVISIONING

Screenshot of the Client Configurator interface, version 0.29.2, showing the account creation process:

- Header:** Webex Meetings, Client Configurator, Viewing Tessa Wingfield's Ap...
- Toolbar:** Session History (0), Logged in as tessa, Logout
- Section:** Client Configurator
- Buttons:** Back to create, Feedback
- Process Steps:**
 - 1 Select Account Template (Setting up)
 - 2 Begin Account creation (Create Accounts)
 - 3 Apply remaining settings and customize (Apply settings from Template)
 - 4 Setup Datafeeds (Setup data feeds)
- Form Fields:**
 - Account Template: A dropdown menu.
 - Filter icon: To filter by Client ID.

Webex Meetings Client Configurator Client Configurator Client Configurator Client Configurator Viewing Tessa Wingfield's Ap... Session History (0) Logged in as tessa Logout

Client Configurator 0.29.2

Back to create 1 Create Account Templates

Instructions

To do:

- Fill out all yellow cells (or import a spreadsheet)
- Validate
- Save

+ Add Row Export Import Turn All Readable On Validate Save Loading: 100.00% Feedback

Item ID Template Name Client Account Manager Reconciler

New Item	6788	16967		
1 total				

Speaker icon Copy icon Up arrow icon User icon Chat icon More icon Close icon

0 Row(s) with Errors, 0 Row(s) with Warnings

Webex Meetings Client Configurator Client Configurator Client Configurator Client Configurator Viewing Tessa Wingfield's Ap... Session History (0) Logged in as tessa Logout

Client Configurator 0.29.2

Back to create 1 Create Account Templates

Instructions

To do:

- Fill out all yellow cells (or import a spreadsheet)
- Validate
- Save

+ Add Row Export Import Turn All Readable On Validate Save Loading: 100.00% Feedback

Item ID Template Name Client Account Manager Reconciler

New Item	6788	AIG AmericanInternationalGroup (16967)		
1 total				

Enter a search term

AIG AmericanInternationalGroup (16967)

Speaker icon Copy icon Up arrow icon User icon Chat icon More icon Close icon

0 Row(s) with Errors, 0 Row(s) with Warnings

Client Configurator 0.29.2 Session History (0) Logged in as tessa Logout

Back to create 1 Create Account Templates

Instructions

To do:

- Fill out all yellow cells (or import a spreadsheet)
- Validate
- Save

+ Add Row Export Import Turn All Readable On Validate Save Validating: 100.00 Feedback

1 Row(s) with Errors, 0 Row(s) with Warnings

Item ID	Template Name	Client	Account Manager	Reconciler
New Item	123	16967	Error	Error

1 total

The screenshot shows a web-based application titled 'Client Configurator' with a version of 0.29.2. The user is logged in as 'tessa'. The main page displays a table titled 'Create Account Templates'. The table has columns for 'Item ID', 'Template Name', 'Client', 'Account Manager', and 'Reconciler'. A row is currently being edited, with the 'Item ID' field containing '123' and the 'Template Name' field containing '16967'. Both the 'Client' and 'Account Manager' fields are highlighted in yellow, indicating they are the focus for input. Each of these yellow cells contains a red button with a white exclamation mark icon and the word 'Error' below it. The 'Reconciler' column is also yellow and contains a similar error button. At the top of the table, there are buttons for '+ Add Row', 'Export', 'Import', 'Turn All Readable On', 'Validate' (which is currently being processed), and 'Save'. A progress bar indicates 'Validating: 100.00'. Below the table, a message says '1 Row(s) with Errors, 0 Row(s) with Warnings'. The bottom of the page shows a footer with various icons and the text '1 total'.

The screenshot shows a web-based application titled "Client Configurator" with a version of 0.29.2. The user is viewing a template named "Tessa Wingfield's App". The interface includes a navigation bar with "Session History (0)", "Logged in as tessa", and "Logout" links. A "Back to create" button is visible on the left.

The main area displays a step-by-step process: "1 Create Account Templates". Below this, there is a toolbar with buttons for "+ Add Row", "Export", "Import", "Turn All Readable On", "Validate", and "Save". The status bar indicates "Validating: 100.00".

A message at the top states "1 Row(s) with Errors, 0 Row(s) with Warnings". The table below has columns: Item ID, IT Manager, Reconciler, Implementation Specialist, and Basis Configuration. A row labeled "New Item" is shown, with each cell containing a yellow background and a red "Error" button in the center. The bottom of the table shows a footer with "1 total" and a series of circular icons.

Webex Meetings x Account Access - Clearwater x Client Configurator x Client Configurator x Viewing Tessa Wingfield's Ap...

Secure | https://www2.clearwateranalytics.com/#pdid=-108

Welcome, Brian I Stephens
Last Login: Fri Jul 20 00:00:00 GMT-600 2018

Search Reports ? gear LOGOUT

clearwater

DASHBOARDS ACCOUNTING COMPLIANCE PERFORMANCE RISK STATEMENTS

Account Access

Account Access My Requests Administration

Step 1: Select Client Step 2: Manage By Step 3: Entitlements

Search + Clearwater Analytics Internal Demo ...

Release Notes Access Agreement

CW can grant user access BUT cannot add new account ← This is from AIG, who cannot create user on WEB.

Webex Meetings x Account Access - Clearwater x Client Configurator x Client Configurator x Viewing Tessa Wingfield's Ap...

Secure | https://www2.clearwateranalytics.com/#pdid=-108

Welcome, Brian I Stephens
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Search Reports ? gear LOGOUT

clearwater

DASHBOARDS ACCOUNTING COMPLIANCE PERFORMANCE RISK STATEMENTS

Account Access

Account Access My Requests Administration

Step 1: Select Client Step 2: Manage By Step 3: Entitlements

Search + Clearwater Analytics Internal Demo ...

Users Accounts Tessa Demo1

Status	Id	Name	Source Ac
✓	65056	RSA-Consolidated Aggregate	
✓	65060	RSA-UK Region	
✓	66255	Sample - RSA Demo AGG	
✓	66253	Sample - RSAI GBP FI Corp	
✓	66256	Sample - RSAI LPs	
✓	126272	AHS Med Mal	
✓	126271	AHS Agg	
✓	126269	AHS SMMC Med Mal	
✓	126268	AHS University Accts	
✓	83644	AIG FI Demo Consolidated	
✓	83641	AIG FI Demo Life	
✓	83643	AIG FI Demo P&C	
✓	117486	Alt - Derivatives	
✓	59993	Anne's Demo Account	
✓	62021	AIA Demo	

Status	Operation	Id	Name
✓	Request Simples	3	CWAD Test
✓	Request Simples	4	Demo - Account 4 ST
✓	Request Simples	5	Account 4 LT
✓	Request Simples	6	Demo - Account 5 LT
✓	Request Simples	63	Aggregate 1-8
✓	Request Simples	486	Account 6 CCY FI
✓	Request Simples	487	MCDEMO2
✓	Request Simples	488	MCDEMO3
✓	Request Simples	661	Account 7 Equity
✓	Request Simples	779	Aggregate 1-6
✓	Request Simples	780	Aggregate 1-3
✓	Request Simples	3899	DEMO-TIME DEPOSIT
✓	Request Simples	5634	DEMO-BALANCED ACCT
✓	Request Changes	5070	Account 10 Long Term

Release Notes Access Agreement

Client Configurator 0.29.2

Template Active

X AT AIG Default Template (6146)

History

Time	User	Entities	Modifications
Aug 22, 2018, 4:42:13	Jacob Holdaway	AIG Default Template	Reconciler
Aug 1, 2018, 9:05:57	Sarah Luse	AIG Default Template	Automatic Lockdown Monthly Lockdown Delay Quarterly Lockdown Delay
Jun 2, 2018, 12:58:08	Jacob Holdaway	AIG Default Template	Reconciler
May 18, 2018, 2:24:24	Tessa Wingfield	AIG Default Template	Tri-Party Recon
May 1, 2018, 1:36:17	Tessa Wingfield	AIG Default Template	Performance Compliance Risk
May 1, 2018, 9:59:54	Jake Davies	AIG Default Template	Reconciler
Mar 19, 2018, 5:10:26	Tessa Wingfield	AIG Default Template	NAIC Designation Group
Jan 26, 2018, 10:23:4	Tessa Wingfield	AIG Default Template	Post Recon FTP Schedule D Book of Record Accrue MMF Is STAT Acc
Dec 4, 2017, 8:38:09	Tessa Wingfield	AIG Default Template	enabledBases

Search

Clear Recent Items

Feedback

10 total

JIRA Sample

Boards Create

Create Issue

Project: Help Desk (HELP)

Issue Type: Help Support

Choose one of these Issue Types from the menu above.

- Help Support: TECHNICAL SUPPORT for hardware, software, or services.
- Help Request: request hardware, software, group membership, or a permission/current permission extension.
- Move Case: cases that need to be moved to another queue.
- ETL Support: move cases regarding ETLs. Please enter a Component and Account ID.

Summary*

Priority: Minor

Critical: Loss of critical production function that usually affects multiple people.

Major: An urgent request or issue regarding loss of critical function.

Minor: An non-urgent request or issue regarding loss of non-critical function.

Computer Name: none

Labels:

Attachment: Drop files to attach, or browse.

Create another Cancel

Production Operations

- › Owned by **Engineering Operations Manager**
- › Significant changes to, or maintenance of, Clearwater's production environment must be performed using the change management system. This must include steps for planning, risk assessment, approval, communication, scheduling, execution and logging.
- › Code deployments moving into Clearwater's production environment must be reviewed and approved by the Engineering Operations team. Deployments must be monitored and logged in the change management system.
- › Emergency production changes may bypass the change management system if necessary or appropriate for the particular incident, but a change management task must be created as quickly as possible following the incident and include all components of the change. All efforts must be utilized to notify applicable department leads who are involved in or affected by the emergency change, as quickly as possible.

Application Development

- › Owned by Development Director, Development Division Leads.
- › New tools and applications being developed for Clearwater's application environment must flow through an approved software development life cycle (defined in Clearwater's SDLC Policy) and change management system, in order to ensure adequate and documented application planning, approval, stability, integrity and security.
- › Code defects discovered in Clearwater's application environment must be scheduled for correction in the change management system, risk-assessed, and assigned to the appropriate development team with an appropriate criticality rating and remediation date.
- › All source code must be maintained using a comprehensive codebase management solution, which monitors and logs all changes to code, provides codebase access only to authorized Clearwater personnel, and provides code recovery capabilities.

Use JIRA as well – JIRA = PRODUCTION Management

No code in PROD

Version Control is by GIT

Use CI continuous integration

Automated testing tool: code scanning, static scan, peer review

Production: vulnerability, penetration test

QA cannot change code

CW has built their own Version Management tool

CW has a DBA team

SDLC Workflow

- › We utilize a continuous-integration workflow.
- › Our development schedule is driven by a monthly dev roadmap meeting, including dev division leads and stakeholders.
- › Product owners plan and schedule, and also own the backlog.
- › Product owners also coordinate with stakeholders to determine requirements.

- › If an application or application component includes security features, dev teams can utilize our information security analyst team for guidance and testing.
- › We maintain segregated environments for development, testing, staging, and production.
- › Production release may only be performed by the engineering operations team, after deploy requests.
- › QA Analysts are integrated into development teams, but report centrally to the QA Manager.
- › Unit/Scenario testing is encouraged, and mandatory for components dependent on data accuracy.
- › Code reviews are encouraged, and mandatory for components with security requirements or externally-facing.
- › Regression testing is performed by QA Analysts, and automated release tests such as static scans, OWASP dependency scans, manual testing scripts are integrated.
- › Tie-out audits are also performed for any components with reporting capabilities (NAIC, GAAP, etc.)
- › Release candidates are in their own code branch and QA analysts must approve these before deploy request is created.

Roles & Responsibilities

- › Separation of duties model.
- › **Users** (Clearwater employees). Responsible for adhering to defined access control practices.
- › **System and Data Stewards**. Employees that perform access management duties within, or function as owners of Clearwater systems and/or data. Responsible for adhering to defined access control practices, and administering/approving access for users appropriately.
- › **System Admins**. Responsible for managing access rights, RBAC, creating/reviewing user accounts, and defining access to network, systems, apps.

**'Team lead' will be responsible to assign role (now centralized). Old model: security analyst.
For CW employee only. Termination from HR. Client provisioning from Admin on User side.**

Least Privilege

- › Each employee should be granted access to systems and applications necessary to perform their role efficiently, and nothing more.
- › We are moving towards a role management method where division managers and team leads will be constantly defining and approving roles for their team members. This helps us remain agile, but responsible. (In response to rapid company growth.)
- › The temporary read-access concept in our database access control policy helps to promote efficiency, and self-healing access with audit trail.

**Access to database for research request → Not role-based; temporary read-access;
Details of audit trail: user + table + reason; back-end of audit is automated; audit log is kept indefinitely.**

Access Management Process

- › Employee user accounts must only be created when requested through our change management tool (JIRA) by HR, and approved by the team lead or department manager.
- › Least privilege for the user account must be assigned through a role.
- › Team leads and department managers must report upcoming role changes to HR (including terminations).
- › When role changes happen, access rights must be reviewed and updated.
- › Terminated employees must have access removed within 24 hours from their scheduled termination date. (Typically this happens when they turn in their access badge.)

Password Management

- › Passwords must be encrypted, never stored in clear-text.
- › New or reset passwords must be temporary, and transmitted to users in a secure automated or in-person format. Password change on first login must be forced.
- › Expiration must happen on a regular basis (180 days currently).
- › Strength requirements must be enforced.
- › Accounts must lock after consecutive failed attempts (5 currently).
- › Suspected compromise must require a password change.

AIG uses SSO hence completely managed by AIG

Privileged Accounts

- › Provided explicitly, through documented request by manager and approved by IT Director. Local admin may be granted if role is appropriate (e.g. developers).
- › Per-user basis only (never a shared account).
- › Reviewed regularly for role appropriateness (this happens quarterly).
- › Creation of or changes to high-risk privileged accounts must be monitored and provide alerts for review following changes.

Backup Processes

- › We utilize continuous database replication between our data centers, as well as regular backups to ensure redundancy.
- › Full backups occur weekly, with differential backups occurring nightly. Once each backup is complete, it is copied across to all sites (both data centers and Boise HQ).
- › We also utilize configuration management software which can rebuild servers and their configurations automatically when necessary.
- › Database backups are restored on a weekly basis to test and development environments (using automated data obfuscation) which validates their integrity.

Hardware Redundancy

- › We utilize server clustering in order to guarantee uptime when a single piece of hardware fails. This includes RAID configurations for storage. This also allows for production deployments while keeping the service up.
- › We have load balancers in place for key infrastructure points, in order to distribute processing evenly across hardware resources. This helps during activity spikes, or for redistribution when a single piece of hardware might fail.

Disaster Recovery

- › We test our recovery capability on a quarterly basis with a DR test between our two data centers.
- › This is a full-failure scenario, where we physically unplug our primary production hardware and test failover to our secondary data center.
- › Our recovery time objective (RTO) is 30 minutes. Our recovery point objective (RPO) is also 30 minutes. The success of our DR tests is based on the measurement against these targets.
- › Currently we have a hot/warm configuration between Boise and Las Vegas. We are working towards a hot/hot configuration, where we will alternate primary production activity back and forth between data centers on a quarterly basis.

Recovery test weekly + Quarterly DRP (Boise <-> Vegas) / No offsite tape storage everything using WAN
2/6 week snapshot | 2 week – 6 week point in time

IT Dependencies

2 controls:

SOC-1?

Calculations: Control 7.3

7.3	The system calculates principal, income and amortization predictions as well as market values daily.	1. Inspected supporting documentation for daily reconciliations for a sample of investments within client accounts to evidence that the system calculates principal, income and amortization predictions as well as market value daily.	No exceptions noted.
-----	--	---	----------------------

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		2. Inspected supporting documentation for a sample of equity securities to evidence the system calculates income as well as market values daily.	
		3. Inspected supporting documentation for a sample of fixed income securities to evidence the system calculates principal, income and amortization predictions as well as market values daily.	PT

Calculations: Control 7.3

- › Calculations are performed as part of the ETL process
- › AWS ETL calculates all accounting values necessary to populate accounting details on the front office
- › Successful completion of the ETL is required for values to show up on website
- › If there are any failures, the ETL will fail
 - » Only details from last successful ETL run will appear on the website
 - » Our reconciliation/CS teams are monitoring this and working through any failures, involving other teams as necessary

AWS = Account Web Service

Completion criteria?

Failure details? E.g., calculation fails because insufficient of data

Principal, income, market value, FAS21 calculation, OTTI, Amortization

List of failures? Escalation processes? Automated? Manual? Evidences of Monitoring

Client Service team is responsible for handling all issues related to process stop

This monitoring is a business control

Responsible for on-time delivery = automated by CW (email notifications), manual delivered, files in server

Before creation, calculation, CW compare calculation between AIG and from vendors? Good? Then Reconciliation; Then create external files for AIG

Calculations: Change Management – Control

2.3	Before being introduced into production, code testing occurs. Testing includes both functional testing of new features, as well as regression testing to ensure existing functionality remains intact.	1. Inspected a sample of application changes to evidence changes were tested prior to being introduced into production.	No exceptions noted.
-----	--	---	----------------------

Interface testing CW relies on reconciliation (detective) – No interface control – specific validation per team

Calculation Changes

- › When we introduce new calculations or changes to calculations, a scenario test is created as well
 - » A member of our QA team or a Product Owner creates a specific scenario that demonstrates the proper calculation
 - This scenario test provides a specific set of data and specifies the results that should be expected with that data
 - » The scenario is then adopted into a code process that validates that the results of the scenario is consistent with the specified expected results
 - The specifics of the data are mocked up in code, and the actual calculation code is used to perform the calculations which is compared to the expected results
- › All new versions of code run through all scenario tests, validating that all calculations are still producing the correct results

No further tests in production

Any control to test completeness/accuracy of the reports?

Audit trail of changes on AIG specific ITD need be requested

List of non-custom reports for AIG

Additional questionnaire for CW?

Calculation Changes: Regression Testing

- › Regression tests are performed on code changes
- › Results of the new code are compared with the results of the current code
- › Developers validate that the results that changed are the results that they expected to change
- › If there are additional changes, they will involve a QA to validate if the changes should have been expected, or if something about the change isn't working correctly
- › Regression tests use a wide range of accounts with existing live data

Interface

General Ledger Reporting

- › Clearwater provides reports that facilitate booking values into general ledger systems and reconciliation of those systems back to Clearwater data
 - » Populated from the same underlying results that are shown throughout the rest of the system (i.e. no new calculations)
 - » Underlying results are just parsed in a way to be consistent with our client's specific Chart of Accounts
 - » The tool to map that custom Chart of Accounts is the GL Wizard
 - Access to this tool is permission based
 - Common for a client to work through the client servicing team to map this

Example: Trial Balance Report

clearwater																		
DASHBOARDS		ACCOUNTING		COMPLIANCE		PERFORMANCE		RISK		STATEMENTS								
GAAP FX Trial Balance																		
AIG AGG-GL-PCIntl Other (123558) Functional Currency: Multiple For 08/01/2018 - 06/31/2018																		
GL Account Description	GL_Account_Number	Business Unit	CO_CD	OSP Code	Balance Type	Beginning Balance	Activity	Ending Balance										
Bonds AFS-All Other Securities Net Market Unrealized Gain/Loss	1100210100	--	3307	0000070412	Asset	34,110,848.83	-1,135,389.42	32,975,459.41										
Bonds AFS-all Other Securities Net Market Unrealized Gain/Loss	1100210100	--	3315	0000070412	Asset	-1,062,321.86	962,411.94	-99,909.91										
Common Stock EPV - Unaffiliated Book Value less Due	1120400110	--	3307	0000070412	Asset	106,948.81	0.00	106,948.81										
Common Stock EPV - Unaffiliated Net Market Unrealized Gain/Loss	1120400110	--	3307	0000070412	Asset	0.00	-0.01	0.00										
EUR Cash	1060038940	--	3307	0000070412	Asset	-246.90	246.90	0.00										
EUR Cash	1002424500	--	3317	0000070412	Asset	4,103.54	0.00	4,103.54										
EUR Cash	1002424761	--	3314	0000070412	Asset	22,445,688.51	9,623,824.22	32,069,692.73										
EUR Cash	1060028800	--	3308	0000070412	Asset	0.00	0.00	0.00										
EUR Cash	1060038950	--	3307	0000070412	Asset	12,306,948.10	-6,046,467.87	6,860,480.23										
EUR Cash	1703009999	--	3314	0000070412	Asset	0.00	0.00	0.00										
EUR Cash	1060038930	--	3307	0000070412	Asset	-548.84	548.84	0.00										
EUR Cash	1002029500	--	3315	0000070412	Asset	28,392,558.34	-21,981,811.13	6,310,547.21										
Mutual Fund EPV - Unaffiliated Book Value less Due	1120500110	--	3308	0000070412	Asset	4,330,409.22	0.00	4,330,409.22										
Mutual Fund EPV - Unaffiliated Net Market Unrealized Gain/Loss	1120500110	--	3308	0000070412	Asset	-31,104.29	-13,824.13	-44,928.42										
OIA - Equity Securities - No Readily Determinable PV Book Value less Due	1300800590	--	3314	0000070412	Asset	216,507.00	-216,507.00	0.00										
OIA - Equity Securities - No Readily Determinable PV Net Market Unrealized Gain/Loss	1300800560	--	3314	0000070412	Asset	0.32	-0.32	0.00										
OIA - Long Term Time Deposit Book Value less Due	1301201000	--	3314	0000070412	Asset	5,778,260.80	-784,182.42	4,994,078.38										
OIA - Long Term Time Deposit Due and Accrued (BS)	1572000100	--	3314	0000070412	Asset	14,151.78	-1,931.51	12,260.27										
OIA - Long Term Time Deposit Net Market Unrealized Gain/Loss	15910RE	--	3314	0000070412	Asset	69,485.60	19,286.02	88,771.62										
Other Cash	1002029200	--	3315	0000070412	Asset	1,095,508.59	555,148.75	1,650,657.34										
Receivable	1702300200	--	3314	0000070412	Asset	1,951,811.65	2,887,979.71	4,339,791.36										
Receivable	1702300200	--	3315	0000070412	Asset	0.00	2,399,403.44	2,399,403.44										
USD Cash	1060028900	--	3315	0000070412	Asset	779,330.90	-12,055.37	767,275.54										
						6,031,289,782.38	13,635,417.33	6,044,925,189.51										
Liability																		
Payable	2704400100	--	3314	0000070412	Liability	0.00	-14,456,508.70	-14,456,508.70										
Payable	2704400100	--	3315	0000070412	Liability	0.00	-12,375,084.70	-12,375,084.70										
		--	--	--	--	0.00	-26,811,293.40	-26,811,293.40										
Income & Expense																		
Bonds AFS-All Other Securities Interest Income	4201401320	--	3307	0000070412	Income	-12,037,792.53	-1,567,161.41	-13,604,958.94										
Bonds AFS-All Other Securities Interest Income	4201401320	--	3317	0000070412	Income	-451.97	-74.58	-526.55										
Bonds AFS-All Other Securities Interest Income	4201401320	--	3314	0000070412	Income	-49,562,167.94	-6,525,335.70	-56,487,503.63										
Bonds AFS-All Other Securities Interest Income	4201401320	--	3308	0000070412	Income	-1,255,658.93	59,456.85	-1,196,202.08										
Bonds AFS-All Other Securities Interest Income	4201401320	--	3315	0000070412	Income	-3,141,440.89	-435,079.69	-3,576,520.58										
Bonds AFS-All Other Securities Miscellaneous Income	4201401320	--	3314	0000070412	Income	-19,365.17	0.00	-19,365.17										
Bonds AFS-All Other Securities Miscellaneous Income	4201401320	--	3317	0000070412	Income	797,710.94	47,661.71	844,361.71										

Example: Entry Detail report

GAAP FX Entry Summary AIG-Accr-GL-PC and Other (135558) Functional Currency: Multiple For 06/01/2018 - 06/31/2018									
	Activity Type	Currency	GL_ACCOUNT_NUMBER	Business Unit	CO_CD	DSP Code	GL Account Description	Debit	Credit
+ Accretion Income	Accretion Income	---	---	---	---	---	---	108,241.23	108,241.23
+ Amortization Expense	Amortization Expense	---	---	---	---	---	---	5,553,370.34	5,553,370.34
Buy	Buy	EUR	1502424761	Charis International Other	3314	0000070412	EUR Cash	173,817,092.79	173,817,092.79
	Buy	EUR	2704400100	Charis International Other	3314	0000070412	Payable	46,124,203.20	60,980,711.90
	Buy	EUR	1102001000	Charis International Other	3314	0000070412	Bonds AFS-All Other Securities Book Value less Due	60,398,965.00	168,215.00
	Buy	EUR	1608004000	Charis International Other	3314	0000070412	Bonds AFS-All Other Securities Due and Accrued (...)	947,361.90	0.00
	Buy	EUR	1020239500	Charis International Other	3314	0000070412	EUR Cash	0.00	27,001,337.17
	Buy	EUR	2704400100	Charis International Other	3315	0000070412	Payable	27,001,337.17	38,245,335.05
	Buy	EUR	1608004000	Charis International Other	3315	0000070412	Bonds AFS-All Other Securities Due and Accrued (...)	126,181.24	0.00
	Buy	EUR	1102001000	Charis International Other	3315	0000070412	Bonds AFS-All Other Securities Book Value less Due	38,397,054.27	139,794.7
	Buy	CHE	2704400100	Charis International Other	3315	0000070412	Payable	0.00	1,501,308.00
	Buy	CHE	1102001000	Charis International Other	3315	0000070412	Bonds AFS-All Other Securities Book Value less Due	1,501,308.00	0.00
+ Cash Transfer	Cash Transfer	EUR	1546038840	Charis International Other	3307	0000070412	EUR Cash	46,255,404.48	46,255,404.48
	Cash Transfer	EUR	1703200200	Charis International Other	3307	0000070412	Cash Transfers	246.90	0.00
	Cash Transfer	EUR	1703200200	Charis International Other	3307	0000070412	Receivable	0.00	795.74
	Cash Transfer	EUR	1703200200	Charis International Other	3307	0000070412	Cash Wire Transfer	795.74	795.74
	Cash Transfer	EUR	1703200200	Charis International Other	3314	0000070412	Cash Transfers	0.00	7,000,000.00
	Cash Transfer	EUR	1502424761	Charis International Other	3314	0000070412	EUR Cash	325,203.25	325,203.25
	Cash Transfer	EUR	1703200200	Charis International Other	3314	0000070412	Receivable	7,325,203.25	0.00
	Cash Transfer	EUR	1646028840	Charis International Other	3306	0000070412	EUR Cash	0.00	16,931,000.00
	Cash Transfer	EUR	1702002000	Charis International Other	3306	0000070412	Cash Transfers	16,951,000.00	0.00
	Cash Transfer	EUR	1703200100	Charis International Other	3307	0000070412	Cash Wire Transfer	7,000,000.00	0.00
	Cash Transfer	EUR	1608004000	Charis International Other	3307	0000070412	EUR Cash	0.00	7,000,000.00
	Cash Transfer	EUR	2704400100	Charis International Other	3307	0000070412	Payable	7,000,000.00	7,000,000.00
	Cash Transfer	EUR	1703200999	Charis International Other	3314	0000070412	EUR Cash	0.00	125,203.25
	Cash Transfer	EUR	2704400100	Charis International Other	3314	0000070412	Payable	325,203.25	325,203.25
	Cash Transfer	EUR	1646028840	Charis International Other	3307	0000070412	EUR Cash	548.84	0.00
+ Classification Change	Classification Change	EUR						57,312,058.45	57,312,058.45
+ Coupon	Coupon	---	---	---	---	---	---	7,882,300.87	7,882,300.87
+ Custody Fee	Custody Fee	EUR	---	---	---	---	---	40,394.20	40,394.20
+ Exchange	Exchange	EUR	---	---	---	---	---	4,363,307.13	4,363,307.13
+ FX Rate Change	FX Rate Change	---	---	---	---	---	---	1,592,388.05	1,592,388.05
+ Initial Load	Initial Load	EUR	---	---	---	---	---	9,034,446.94	9,034,446.94

Custom Developed Entry Files

- › We can create custom formatted output files to match the file specifications needed by accounting systems
 - » AIG has a couple specific file formats
 - » Primarily about getting file into correct format (e.g. columns in the right order, correct format of values, etc.)
 - » Changes to data are limited to
 - Removing entries for GL Accounts of “IGNORE” (e.g. unrealized g/l entries on short term investments)
 - Merging data from GAAP basis and CGAAP2 basis to produce adjustments from the GAAP to CGAAP2
 - Producing balancing entries when things don’t balance within a Company Code and Currency

Examples of Files

Delivery? All above are txt file? Input to SAP?

Files pushed from CW to AIG

GL Aggregates

- » All AIG accounts should belong to one of 13 aggregates
 - » 11 aggregates are set up to deliver files directly into SAP
 - All accounts in these 11 aggregates are ensured to have entries delivered to SAP
 - » 1 aggregate is for accounts that we send manual files for local offices to book on their own
 - Accounts in this aggregate are the responsibility of the local offices to book into the ledger
 - » 1 aggregate is for accounts that we should have on Clearwater, but should not book entries for

Additional GL Checks

- › Within the ETL process, in addition to the normal accounting consistency error (ACE) checks, there is another set of checks that are performed
 - » Validation that no entries are made to blank GL Account numbers
 - » Validation that at an aggregate level, debits and credits are still in balance
 - » Additional checks are being developed, but not yet released
 - E.g., Validation that the Trading Partner values we are using in the SAP files are valid