

munvo campaignQA

Automated Quality Assurance For Adobe Campaign

Quality Assurance (QA) issues and errors are on the rise as digital marketers and marketing operation directors struggle to manage the increased volume and complexity of personalized marketing messages. Incomplete dynamic fields, over communicating and missed deadlines are just a few of the many problems they are facing. To address these QA issues, Munvo has introduced campaignQA, a tool that compliments Adobe Campaign and improves the marketing execution process.

- Automates the validation of marketing campaigns and monitors the results with robust alerting and reporting
- Provides contact frequency controls
- Enables a rules-based validation approach for marketing data quality
- Ensures fulfillment vendors interpret list files correctly and that test/control cell sizes match the plan of expected response and lift rates
- Creates an audit trail of compliance of internal privacy policies and emerging regulatory rules, such as GDPR



| campaignQA's Primary Functions:

- Inbound & Outbound Automated QA
- Offer Arbitration
- Post-Deployment Campaign Monitoring
- Marketing Datamart QA
- Privacy Protection & Marketing Regulatory Compliance

Inbound & Outbound Automated QA

campaignQA takes error prone manual work out of verifying list output files that are ready for deployment by automating the entire QA process across all marketing campaigns. It deploys a 3-phased approach for data validation, creating the capability to:

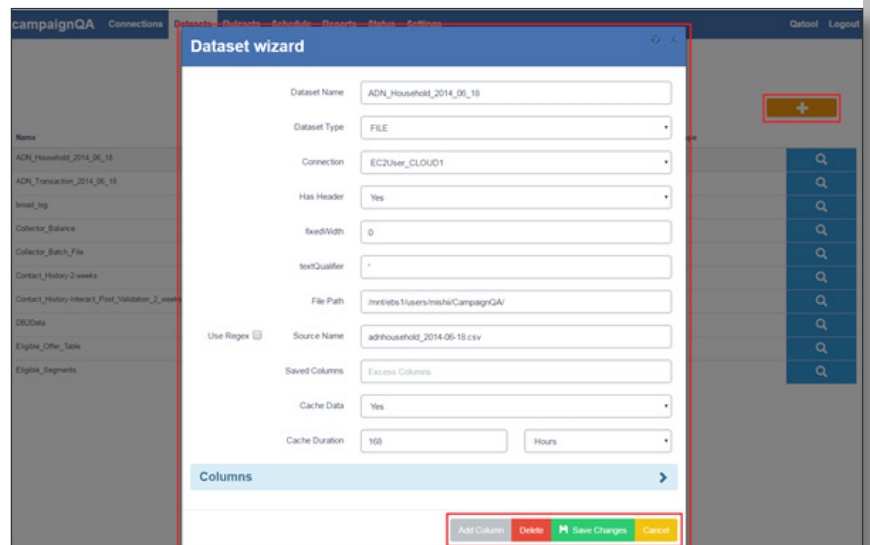
1. Verify the data that is a source to your workflow
2. Verify campaign metadata, user-defined fields, workflow logic and content
3. Verify output files match the campaign design and that data is clean and correct

Users define important data sets via an easy-to-use Dataset Wizard that's part of campaignQA's user interface and is integrated into Adobe Campaign. This allows marketers to compare output files to source database tables and system tables to catch workflow or output process errors. This comparison capability is combined with user-defined rules, created using a Rules Wizard with a point-and-click expression builder. Marketers can now create rules to flag or correct null, invalid, duplicate and unexpected values.

Personalization files can be verified to be correctly formatted, identify values that are part of an exclusion or black list and match to the intended recipient as defined in the marketing database. By comparing source data and output data to each other and to user-defined rules, marketers can rest easy that each workflow is targeting the right customers with the right offer content every time.

When issues are found, users can choose to either quarantine or correct the error based on the rules that have been created. campaignQA can generate "cleaned valid" output files that remove any failed rows, as well as reports that can be used by other downstream processes. Users can also use campaignQA's functionalities and reports to correct issues in the original database/data source to prevent other campaigns from experiencing the same errors.

campaignQA enables historical QA reporting including breakdowns of errors by severity levels that users create. Drill down to a specific workflow execution and see details of rows processed, rules executed and other run metadata. Users can even drill down to specific passed or failed rows for further investigation.

The screenshot shows the 'Dataset wizard' window in the campaignQA application. The window has a blue header with the title 'Dataset wizard'. Below the header, there are several input fields and dropdown menus. The 'Dataset Name' field contains 'ADN_Household_2014_06_18'. The 'Dataset Type' is set to 'FILE'. The 'Connection' is 'EC2User_CLOUD1'. The 'Has Header' is 'Yes'. The 'FixedWidth' is '0'. The 'TextQualifier' is ' '. The 'File Path' is 'J:\redists\users\masha\CampaignQA\'. The 'Source Name' is 'adhousehold_2014-06-18.csv'. The 'Saved Columns' is 'Excess Columns'. The 'Cache Data' is 'Yes'. The 'Cache Duration' is '168' hours. At the bottom, there is a 'Columns' section with a right-pointing arrow. Below the 'Columns' section, there are four buttons: 'Add Column', 'Delete', 'Save Changes', and 'Cancel'. The 'Save Changes' button is highlighted in green. The background of the application shows a sidebar with a list of datasets and a main area with a search bar and a list of search results.

The QA automation doesn't stop there as campaignQA also provides the ability to create validation metrics with specific values or ranges of values that can be compared against the output files to generate validation reports. This can be expanded to cover complex dynamic offer logic where certain offer attributes are defined at either the cell or individual customer level.

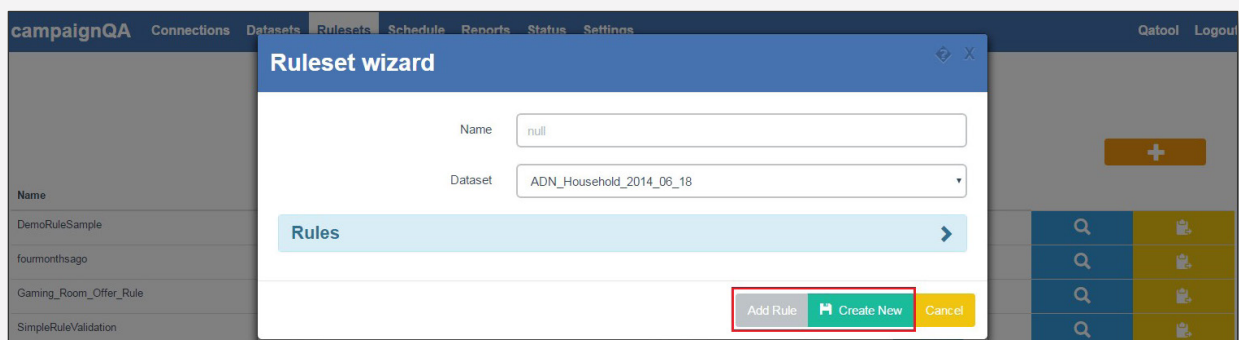
As campaign automation has increased with more event-driven marketing, workflows often have dependencies on new source data being loaded or other workflows to run first. campaignQA can ensure dependent workflows have successfully executed in sequence and on-schedule. It can also verify that new data has been loaded into a file or table and perform robust QA checks on that new data before your workflow begins to consume it.

Offer Arbitration

campaignQA will allow marketers to manage contact frequency controls that can be customized at individual, household, or cell/segment levels with no coding required. The easy-to-use interface includes a Rules Wizard with an intuitive expression builder.

Here are just a few examples of the types of offer arbitration rules users can create:

- Enforce minimum or maximum number of contacts per time period, across campaigns
- Avoid duplicate or conflicting offers/content at customer or household level
- Enable messaging sequencing to control a logical flow of messages, including evaluating opens, clicks or recent purchase data
- Utilize next best offer rules based on the level of engagement for each customer or household observed in previous communications, down to specific offer details (even when using dynamic content)



campaignQA can fully integrate with multiple workflows within an organization and leverage not only all the important Adobe system tables (Contact History, Response History, Treatment, etc) but can also utilize any table or file within the environment.

The screenshot shows the 'Test wizard' window. At the top, the 'Name' field is 'Outbound_Email_Tests' and the 'Dataset' is 'OUTBOUND_EMAIL'. Below this is a 'Rules' section with a table of rules. The first rule is named 'value' with a query 'SELECT \$RESULTS FROM OUTBOUND_EMAIL WHERE STATEMENT_BONUS greater than or equal to 500'. The second rule is named 'Sum_Column' with a query 'with table1 as (select sum(STATEMENT_BONUS) sumTotal from OUTBOUND_EMAIL) select \$RESULTS from OUTBOUND_EMAIL outer join table1 on 1=1 where table1.sumTotal greater than or equal to 10000'. Each rule has 'View/Edit' and 'Delete' buttons. An 'Add Rule' button is at the bottom right of the rules table. At the bottom of the wizard are 'Delete', 'Save Changes', and 'Cancel' buttons.

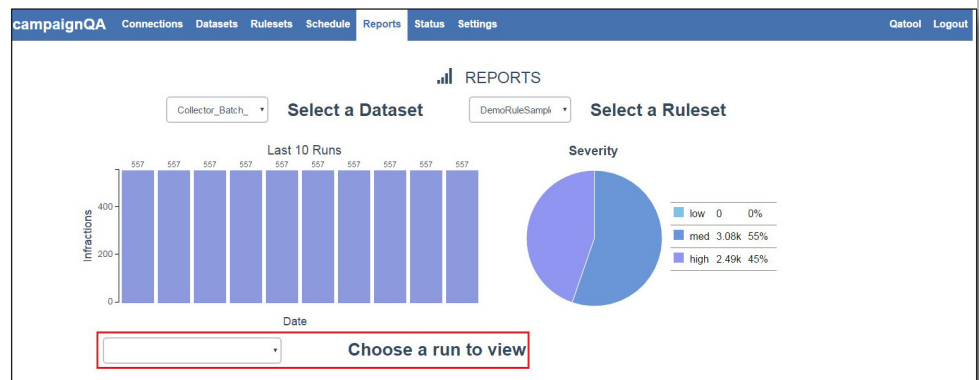
Name	Query	View/Edit	Delete
value	SELECT \$RESULTS FROM OUTBOUND_EMAIL WHERE STATEMENT_BONUS greater than or equal to 500		
Sum_Column	with table1 as (select sum(STATEMENT_BONUS) sumTotal from OUTBOUND_EMAIL) select \$RESULTS from OUTBOUND_EMAIL outer join table1 on 1=1 where table1.sumTotal greater than or equal to 10000		

Post-Deployment Campaign Monitoring

Whether a marketer is running an outbound campaign like email or SMS or an inbound campaign like website or mobile application personalization, campaignQA can monitor what happens after the marketing content goes live. This will allow marketers to quickly catch any issues that were not identified as part of the pre-launch QA as well as enable users to make course-corrections for targeting and offer logic that is not performing as expected.

For real-time campaigns using Adobe's Real-time Customer Interaction Management (RTIM), campaignQA can monitor each segment and offer type in your contact strategy to identify any assignment logic issues. For outbound marketing, campaignQA ensures that once list files are loaded by a delivery partner, such as an ESP, they are interpreted correctly and that all dynamic content assignment is accurate.

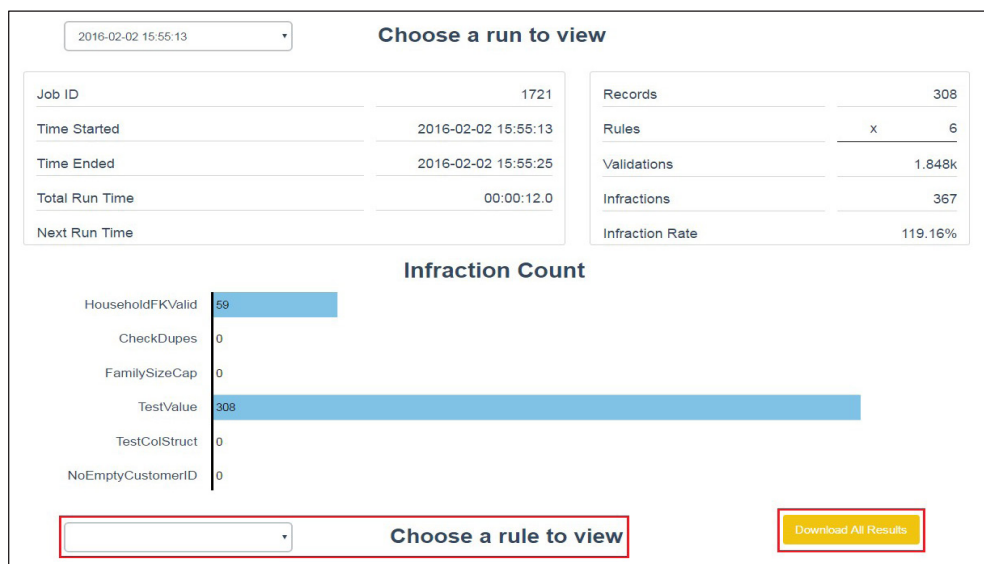
A common automated check and associated report detects differences in an email "send" file provided by the ESP against Adobe Campaign's contact history tables to catch errors on the vendor side.



For post-campaign deployment, campaignQA has the ability to automatically monitor how a user's campaign is performing across their response metrics. Reporting is immediately available to understand each cell's response metrics that have been defined, from email opens and clicks to more complex response attribution logic to look for purchase events.

Alerts can be triggered based on lift rates between test and control cells being above or below user-defined thresholds and none of this alerting or reporting functionality

requires the user to know how to code. Users can course-correct in the middle of a campaign or present mid-stream performance results using campaignQA.



Marketing Datamart QA

Because of the way campaignQA is designed to integrate with Adobe Campaign, it also creates a rules-based validation capability for your marketing data mart and ETL. The same datasets and rules that are used to QA campaigns can be leveraged to provide QA reporting and data correction capabilities for user's marketing databases. Many companies extract data from Campaign system tables to be used in broader multi-channel customer engagement marketing and reporting, and campaignQA can improve the performance of those ETL jobs - through caching and archiving data - as well as monitor them for accuracy.

These same capabilities can be used to make Adobe Campaign's system tables even more accessible to Campaign Developers, Managers and System Administrators. Data in the system tables can be leveraged in reporting and rules can be created to review campaign, cell and offer metadata across your entire campaign universe to determine if best practices are being followed. Similarly, if users need to quickly analyze all the campaigns that utilize a particular table or data source, campaignQA makes that easy by mining system table data to allow users to identify all the workflows that may be affected by data source structure changes.

Privacy Protection & Marketing Regulatory Compliance

campaignQA can be a powerful tool to automate and simplify the complexities in dealing with new customer privacy regulations, such as the EU's General Data Protection Regulation (GDPR) and Canada's Anti-Spam Law (CASL). campaignQA creates a global dashboard of quality assurance (QA) activities, while maintaining a comprehensive audit trail of past validations and issues. This helps to achieve and document organizational compliance with GDPR's and CASL's regulations.

campaignQA even comes standard with some GDPR & CASL rules pre-built and ready to incorporate across all Adobe Campaign's workflows. Of course, users can utilize campaignQA's Rules Wizard to develop their own custom data privacy rules and have them automatically applied across any of their campaigns that need those rules. Users can also use campaignQA's Dataset Wizard to run these rules against source tables across their data sources to enforce compliance with data privacy rules even outside of their campaign automation solution.

Finished Validations			
Completed	Start Time	End Time	Details
Yes	2016-05-11 15:00:00	2016-05-11 15:00:04	temp
Yes	2016-05-11 16:00:00	2016-05-11 16:00:04	temp
Yes	2016-05-11 17:00:00	2016-05-11 17:00:04	temp
Yes	2016-05-11 18:00:00	2016-05-11 18:00:04	temp
Yes	2016-05-11 19:00:00	2016-05-11 19:00:04	temp
Yes	2016-05-11 20:00:00	2016-05-11 20:00:03	temp
Yes	2016-05-11 21:00:00	2016-05-11 21:00:04	temp
Yes	2016-05-11 22:00:00	2016-05-11 22:00:04	temp
Yes	2016-05-11 23:00:00	2016-05-11 23:00:04	temp
Yes	2016-05-12 00:00:00	2016-05-12 00:00:03	temp

campaignQA Connections Datasets Rulesets Schedule Reports Status Settings			
RULESETS			
Name	Datasets	Rules	
DemotRuleSample	Collector_Batch_File	5	Q
Humanoribagga	Participant_Data	2	Q
Gaming_Room_Other_Rule	Gaming_Room_Other_List	8	Q
SimpleRuleValidation	DBData	14	Q
Test_CMSB_Table	Interest_Profile_Check	2	Q
TestInteractDB	WAO_CHECKPERMITTB	1	Q
TestLocaFile	ADM_Transaction_2014_06_18	1	Q
TestRuleSet	WebDataset	1	Q
Validate_Collector_Batch_File	Collector_Batch_File	5	Q
Validate_Suppression_List	EXECUTIVESUPPRESSIONLIST	3	Q

Technical Specifications

- What marketing applications is campaignQA compatible with?
 - Product agnostic: Any marketing tool that receives inputs and outputs based on lists
- What versions of marketing tools are supported?
 - On-premise versions of marketing automation tool
 - TBD with cloud version
- Which databases are supported?
 - Java DB connectivity
- Which versions of databases are supported?
 - N/A
- Do I need any special or specific accesses from my DB or marketing application to be using campaignQA?
 - Read access to client database and full access to internal database
- Other relevant information:
 - Application server: Tomcat (recommended)