Version 10 Release 0
February 28, 2017

IBM Campaign Release Notes

IBM

This edition applies to version 10, release 0, modification 0 of IBM Campaign and to all subsequent releases and modifications until otherwise indicated in new editions.

Contents

Chapter 1. IBM Campaign 10.0 system requirements and compatibility

IBM® Campaign is part of the IBM Marketing Software suite of products. Campaign version 10.0 requires Marketing Platform 10.0.

Where to find complete system requirement and compatibility information

For a list of IBM Marketing Software product versions compatible with this product and a list of third-party requirements for this product, see the *Recommended Software Environments and Minimum System Requirements* document. This document is posted under Detailed System Requirements on the IBM Support Portal website: (http://support.ibm.com).

You can also access this document by selecting **Help > Product documentation** when you are logged in to IBM Marketing Software.

Prerequisites for using IBM Campaign

Before you begin using IBM Campaign, confirm that your environment meets the following requirements.

- For an improved user experience, use at least a 21" screen.
- For an improved user experience, set your screen resolution to 1600 x 900. Lower resolutions can result in some information not being properly displayed. If you use a lower resolution, maximize the browser window to see more content.
- A mouse is best for navigating in the user interface.
- Do not use the browser controls to navigate. For example, avoid using the Back and Forward buttons. Instead, use the controls that are in the user interface.
- If pop-up blocker (ad blocker) software is installed on the client machine, IBM Campaign might not function properly. For best results, disable pop-up blocker software while running IBM Campaign.
- Ensure that the technical environment meets the minimum system requirements and the supported platforms.*
- The correct browser and versions must be used.*
- Clear the browser cache after upgrading or applying any fix pack. This only needs to be done once, after the application is updated.
- If you use Internet Explorer (IE) with IBM Campaign or any module that uses Campaign flowcharts (eMessage, Contact Optimization, Interact, Distributed Marketing): To log in multiple times to view side-by-side information, open IE and log in to IBM Marketing Software. Then select **File** > **New Session** in the IE menu bar. In the new IE browser window, log in to IBM Marketing Software as the same or a different user.

  Important: Do not use any other method to open multiple sessions. For example, do not open a new tab; do not open another browser session from the **Start** menu or desktop icon; and do not use **File > New Window** in IE. These methods can corrupt information that is shown in the application.

*For details on the items indicated by an asterisk, see the *IBM Marketing Software Recommended Software Environments and Minimum System Requirements*.

IBM Campaign documentation roadmap

IBM Campaign provides documentation and help for users, administrators, and developers.

Table 1. Get up and running

Task	Documentation
Find out about new features, known issues, and limitations	*IBM Campaign Release Notes*
Learn about the structure of the Campaign system tables	*IBM Campaign System Tables and Data Dictionary*
Install or upgrade Campaign	One of the following guides: • *IBM Campaign Installation Guide* • *IBM Campaign Upgrade Guide*
Implement the IBM Cognos® reports provided with Campaign	*IBM Marketing Software Reports Installation and Configuration Guide*

Table 2. Configure and use Campaign

Task	Documentation
• Adjust configuration and security settings • Prepare Campaign for users • Run utilities and perform maintenance • Learn about integrations	*IBM Campaign Administrator's Guide*
• Create and deploy marketing campaigns • Analyze campaign results	*IBM Campaign User's Guide*
Improve flowchart performance	*IBM Campaign Tuning Guide*
Use Campaign functions	*IBM Macros for IBM Marketing Software User's Guide*

Table 3. Integrate Campaign with other IBM products

Task	Documentation
Integrate with IBM Engage	*IBM Campaign and Engage Integration Guide for IBM Marketing Cloud*
Integrate with IBM Journey Designer	http://www.ibm.com/support/knowledgecenter/SSER4E/JourneyDesigner/kc_welcome_journeydesigner.dita?lang=en
Integrate with IBM Digital Analytics	*IBM Campaign Administrator's Guide*: How to configure the integration. *IBM Campaign User's Guide*: Targeting IBM Digital Analytics segments in campaigns.
Integrate with IBM Marketing Operations	*IBM Marketing Operations and IBM Campaign Integration Guide*
Integrate with IBM Opportunity Detect	*IBM Campaign Administrator's Guide*: How to configure the integration. *IBM Opportunity Detect Administrator's Guide* and *IBM Opportunity Detect User's Guide*: How to administer and use the product.

Table 3. Integrate Campaign with other IBM products (continued)

Task	Documentation
Integrate with IBM eMessage	*IBM Campaign Installation and Upgrade guides*: How to install and prepare eMessage components in the local environment. *IBM eMessage Startup and Administrator's Guide*: How to connect to the hosted messaging resources. *IBM Campaign Administrator's Guide*: How to configure offer integration.
Integrate with IBM SPSS® Modeler Advantage Enterprise Marketing Management Edition	*IBM Campaign and IBM SPSS Modeler Advantage Enterprise Marketing Management Edition Integration Guide*
Note: Additional integrations may be available that are not listed in this table. See Product tools and utilities for IBM Campaign. Also see IBM Solution Engineering Projects.	

Table 4. Develop for Campaign

Task	Documentation
Use the REST API	See the IBM Knowledge Center
Use the SOAP API	• *IBM Campaign SOAP API Guide* • JavaDocs in `devkits\CampaignServicesAPI`
Develop Java™ plug-ins or command-line executables to add validation to Campaign	• *IBM Campaign Validation PDK Guide* • JavaDocs in `devkits\validation`

Table 5. Get help

Task	Instructions
Use the IBM Knowledge Center	Go to http://www.ibm.com/support/knowledgecenter/ SSCVKV/product_welcome_kc_campaign.dita
Open online help	When using the IBM Campaign application: 1. Choose **Help > Help for this page** to open a context-sensitive help topic. 2. Click the **Show navigation** icon in the help window to display the full help. You must have web access to view context-sensitive online help. Contact IBM Support for more information about accessing and installing IBM Knowledge Center locally for offline documentation.
Get PDFs	When using the IBM Campaign application: • Choose **Help > Product documentation** to access Campaign PDFs. • Choose **Help > All IBM Marketing Software documentation** to access all product PDFs. • Click the links for PDFs during the installation process.
Get support	Go to http://www.ibm.com/ and click **Support & downloads** to access the IBM Support Portal.

Chapter 2. New features and changes in version 10.0

IBM Campaign 10.0 includes a number of new features and changes.

For a list of newly supported and discontinued platforms, see the document *Recommended Software Environments and Minimum System Requirements*, which is posted under Detailed System Requirements on the IBM Support Portal (http://support.ibm.com).

Upgrade paths

Because version 10.0 is a major release, you can upgrade from 8.6.x, 9.0.x, or 9.1.x. For instructions, see the *IBM Campaign Upgrade Guide.*

Enhanced user interface for Marketing Platform, Campaign, Interact, and Contact Optimization

This release updates the user interface so that it is easy to use, offers a clean, modern design, and delivers improved inline text and error messages. The new look does not change how the product works, and you can get updated documentation from the **Help** menu.

Context-sensitive help for Configuration properties

When you view configuration properties under **Settings** > **Configuration**, you can choose **Help** > **Help for this page** to display context-sensitive help. For example, if you request help for the `Campaign | caching` page, you see a help topic that specifically describes all of the caching options. You must have an internet connection to use this feature.

EMM files and directories renamed to IMS

Files and folders that included "EMM" have been changed to IMS. For example, the default top-level directory is now `C:\IBM\IMS` and the names of the installers are `IBM_Marketing_Software_Installer_10.0.0.0_linux.bin`, `IBM_Marketing_Software_Installer_10.0.0.0.sh`, and `IBM_Marketing_Software_Installer_10.0.0.0_win.exe`.

Integration with IBM Engage in the IBM Marketing Cloud

IBM Campaign v10.0 can be integrated with IBM Engage in the IBM Marketing Cloud. IBM Engage provides digital marketing and lead management solutions incorporating email, SMS, and mobile push, along with embedded analytics. The integration provides digital marketers with the ability to personalize and track each customer interaction, communicate over multiple channels, and protect sensitive personal data. Marketers can use the IBM Campaign segmentation capabilities together with IBM Engage to target specific audiences, personalize communications, and reach customers through email, SMS text messaging, and mobile push campaigns. For details, see the *IBM Campaign and Engage Integration Guide for IBM Marketing Cloud*.

Integration with IBM Journey Designer

IBM Campaign customers can now use IBM Journey Designer to design and view high-level journey maps to empathetically understand the messaging and touchpoints that their customers go through. IBM Campaign users can use Journey Designer to strategically plan out the ideal customer journey and the different interactions that happen across that journey. As you create journeys, you can link a particular interaction to an existing campaign, assign requests to a particular user to execute and collaborate on what needs to be included in that particular campaign. For information, see the separate Journey Designer documentation.

Advanced search for campaigns, sessions, offers, segments (181352, 211268)

You can search for flowcharts and flowchart-related objects, including names of process boxes, configuration details, descriptions, owners, user variables, user database tables, segments, associated offers, and any other objects that are stored in campaign session files (`.ses`).

1. Go to any of the following locations:
   - The **All campaigns** page
   - The **All sessions** page
   - Any flowchart tab in View mode
2. Click **Search flowcharts**.

When you do a search, all flowcharts in all campaigns in the current partition are searched. Searching is not case-sensitive. Currently, the search results persist until you explicitly clear the results. For more information, see the *IBM Campaign User's Guide*.

Note: Flowcharts are not searchable until you index them. See below for more information.

Make flowcharts searchable by indexing the .ses file

Version 10 introduces the ability to search flowcharts. However, flowcharts are not searchable until you index them. There are two ways to make flowcharts searchable:

- Batch index all flowcharts in a partition by running `advSrchUtil` (.bat or .sh), or
- Index a single flowchart by running `unica_acsesutil` with the `-J` option.

Existing indexes are not updated automatically. To ensure accurate search results, follow these guidelines:

1. Run `advSrchUtil` immediately after upgrading IBM Campaign, to index all existing flowcharts in a partition.
2. Run `advSrchUtil` periodically to create or update search indexes on all flowcharts in a partition.
3. If you want to affect just a single flowchart, run the `unica_acsesutil` session utility with the `-J` option.

When `advSrchUtil` runs for the first time, it processes all flowcharts in the given partition by serializing them into JSON and indexing them.

The next time `advSrchUtil` runs, it processes only the flowcharts that were modified or added since the last run.

For this reason, the first run takes longer than subsequent runs. A very large flowchart can take several minutes to process, so if there are many flowcharts the tool may take a long time to finish. Best practice is to run the tool regularly. For example, if you typically add or modify hundreds of flowcharts per week, consider running the tool twice a week.

The following examples summarize how to run the commands. For complete information, see the *IBM Campaign Administrator's Guide*.

- Unix/Linux: `<Campaign_Home>/bin/advSrchUtil.sh <partition>`
  `<campaignSharedHome if clustered>`
- Windows: `<Campaign_Home>\bin\advSrchUtil.bat <partition>`
  `<campaignSharedHome if clustered>`

The utility interactively prompts for a user name and password that has permission to access all of the flowcharts in the given partition. The `campaignSharedHome` is required only if the IBM Campaign listener is clustered.

- `unica_acsesutil -s <Flowchart ses file> -h <partition_name> -J -o <output_file_or_directory_path> -y <user_id> -z <password>`. You must include `-s` to indicate the session file. The options `-y` and `-z` are optional; if you omit them, the tool prompts for user ID and password. All options are case-sensitive.

GSKit replaces OpenSSL as the cryptography standard. (Epic 130497, Story 199501, Task 211566)

To configure GSKit, follow the instructions in the *IBM Marketing Platform Administrator's Guide*. The high-level steps are summarized below:

1. Generate Campaign certificates using IBM GSKit and configure settings in CAMPAIGN_HOME/conf/config.XML.
2. Generate JAVA certificates.
3. Exchange IBM Campaign GSKit certificates with JAVA certificates.
4. Configure SSL certificates in the WebSphere® or WebLogic application server.

Note: For upgrades: Existing customers with SSL environments must remove the SSL certificates and configure new certificates using GSKit. Existing SSL certificates will not work. For instructions, see the GSKit documentation and the *IBM Marketing Platform Administrator's Guide*.

Hortonworks ODBC driver support (211291)

The Apache Hortonworks 64-bit ODBC driver for HDP 2.3 (v2.0.5) is now supported as a driver for Hive-based Hadoop big data (user data sources only).

New environment variable for listener script: STALE_CONN_TIMEOUT (204453)

A new environment variable, `STALE_CONN_TIMEOUT`, is available for the listener script file for IBM Campaign and Contact Optimization. The listener script file is `rc.unica_ac/cmpServer.bat` (for Campaign) and `ACOServer.sh/.bat` (for Contact Optimization), located in `<CAMPAIGN_HOME>\bin`.

The STALE_CONN_TIMEOUT variable was introduced to enable long-running campaigns to continue without losing connection to the back-end database. If a connection is idle for the number of seconds defined, the connection will be re-opened. For example: STALE_CONN_TIMEOUT=<seconds>. If you add or change this environment variable, you must restart the listener. If a connection is lost, the following debug message appears in the Campaign flowchart or Contact Optimization server log file: **[DB QUERY] Connection is stale, so re-opening DB connection.**

Hive ODBC.ini file requires additional parameter GetTablesWithQuery=1 (206508)

If you are using a Hive-based Hadoop big data source as a user database, the ODBC.ini file for your Hive ODBC driver must include the line GetTablesWithQuery=1. This line is necessary to address a Hive limitation of the GetTables ODBC API. Omitting this line can result in a connection timeout error for the Hive Hadoop datasource. This change applies to all Hive ODBC drivers. For more information, see the *IBM Campaign Installation Guide*.

New configuration property in Teradata data source template: UseGroupByForDistinct

A new property, **Campaign | partitions | partition[n] | dataSources | dataSourcename | UseGroupByForDistinct**, was added to the Teradata datasource template. By default, this property is FALSE. When this property is enabled, <select query> uses a GROUP BY statement instead of DISTINCT.

The reason for this addition: Flowcharts execute the query "select DISTINCT <audience id> from <table>" to fetch unique records when a table is not mapped as a normalized table in IBM Campaign. When such queries are submitted against Teradata, it causes additional sorting of data on the database and high CPU consumption. The Teradata DBA recommendation is to use GROUP BY instead of DISTINCT, because GROUP BY can take advantage of Teradata multi AMP processing architecture.

New configuration property: cacheSystemDSQueries

A new configuration property, **Campaign | partitions | partition[n] | server | optimization | cacheSystemDSQueries**, was added to improve performance. When set to TRUE, this property reduces multiple execution of queries on the IBM Campaign system tables by caching the query results. When set to FALSE, query results are not cached. The default value is TRUE.

Ability to enable trace logging in `unica_aclsnr.log` for diagnostic purposes

You can enable trace logging for diagnostic purposes, when working with IBM Support. When you enable trace logging, trace events are written to both the listener log `unica_aclsnr.log` and the flowchart log `<flowchart>.log`. Trace events are identified in the log file by [T].

To enable trace logging:
1. Add the following entry to the setenv.sh or setenv.bat file: UNICA_ACTRACE=Trace

2. Restart the listener.

Note: Trace logging can degrade performance so be sure to disable it (comment out the line and restart the listener) after you are done.

Web application clustering Suite-wide

Previously, Web application clustering was supported only for stand-alone Campaign. Now, web application clustering is supported for IBM Campaign along with other integrated products in the Suite. For example, if Campaign is deployed in a web application cluster then the user can configure IBM Marketing Platform, Contact Optimization, Marketing Operations, or eMessage in the same web application cluster. Even though Interact does not support web application clustering, it can also be configured with the IBM Campaign application deployed in a web application server cluster. Only Sticky sessions are supported. No session replication is done, as the focus is on scalability. Failover is not implemented.

Performance enhancement (195323)

For Campaign+Marketing Operations integrated environments, performance has been improved on Save and Exit Flowchart.

New option during installation to create a system table data source connection in the web application server

You can allow the installer to create the connection to the Campaign system tables in the web application server. To enable automatic data source creation during installation, on the Datasource Creation panel, select the **Create Campaign Datasource** check box and supply information about your application server.

- The installer creates the data source using `campaignPartition1DS` as the JNDI name.
- The installer creates the data source connection for one partition only. If you have multiple partitions, you must create additional connections manually.
- Note that, if you are using WebLogic, you must add the JDBC driver to your web application server classpath manually even if you allow the installer to create the data source. The installer does this automatically for WebSphere.

Chapter 3. Fixed defects in IBM Campaign 10.0

The following defects were fixed in Campaign 10.0.

Table 6. Campaign fixed defects

ID	Fixed defect
223812	Doc Defect: Package ID behavior 20595
221776	VERSION: 213486: Unable to save Custom Campaign Attributes in 9.1.2.1 -- ATTRIBUTE is invalid. Please reduce the length of the text.
221775	VERSION: 212799: 'OK' button on 'More Options' window does not close the dialog upon clicking. User has to click Cancel button instead of OK
221774	VERSION: 211648: The extracted derived field in a Call List process box is lost when the process boxes are copied into a new flowchart.
221639	Server Busy (10453) message is reported when large flowchart with complex processing.
221576	"NEXT" BUTTON REMAINS GRAYED OUT IN IBM CAMPAIGN TABLE MAPPING SCREEN EVEN AFTER SELECTING CORRECT AUDIENCE FIELD.
219636	Error 11107 appears when pasting template in new flowchart.
219311	10404 error occurs when profiling
219309	MAIL LIST PROCESS BOX CRASHES 10404
219304	Core file issues which are reported in PMR 209964 in OCBC customer environment
219004	unica_svradm STOP command pauses flowchart, that is scheduled using Schedule process box, instead of stopping it
218512	flowchart gets stuck during cut or copy operation
216932	WITH IN-DB OPTIMISATION ACTIVATED, CAMPAIGN DROPS TEMP TABLES WITHOUT CANCELLING THE QUERY
216922	The issue is that the User Authorization time reported appears to always be 5 hours ahead of time (GMT) from when the actual time is reflected in the User Authorization List (from the server)
216921	Cannot assign product to offer - "Invalid Data Format for Relevant Product(s)."
216875	Search functionality is not fully working in Target Cells spreadsheet in Edit Mode
216785	No DB2 SQL Datafiltering when selection box include
216715	VERSION: 213762: PRE:VALUES IN PARAMETER TAB FOR CALLLIST PROCESS BOX ARE RESET
216714	VERSION: 211648: The extracted derived field in a call list process box is lost when the process boxes are copied into a new flowchart.
216711	VERSION: 198717: Maillist offer attributes get incorrect value
216709	VERSION: 212799: 'OK' button on 'More Options' window does not close the dialogue upon clicking. User has to click Cancel button instead of OK
215064	10404 when flowchart process is unable to gather Platform configuration settings.
213571	Restoring Process box connection for Call List process box result in to error 17583
213569	Segment process 'do not run subsequent processes for empty segments' runs subsequent processes for empty segments. "
213567	Unable to see newly mapped fields when outputting to mapped table
213566	Right-click button menu is not staying open while working with flowcharts in Safari 7 browser
213565	After applying fixpack 9114, the 'fields to log' disappear in the Log tab of response process box.
213564	The selected field in eMessage process box gets changed automatically in IBM Campaign.

Table 6. Campaign fixed defects (continued)

ID	Fixed defect
213563	Output Fields Are Getting Remapped With Output File Name Change
213561	IBM Campaign : Server side validation doesn't happen on Campaign offer page.
213559	Entry is hanging out of field in Japanese on IE 11 FOR SEGMENT PROCESS BOX
213557	Using Chrome if you add segments to a segment process then try to move the first segment down, it messes up the list
213554	Offer API default attributes not being populated
213553	'Audience ID field(s)' becomes empty on remapping tables
213551	Removing input from Segment process and then navigating to General tab doesn't remove segments, can cause segment mismatches
213550	eMessage Landing Pages not appearing for selection in Extract box within Campaign
213548	THROTTLING DATABASE CONNECTIONS WITH THE MAXQUERYTHREADS PARAMETER ON DATASOURCE DOES NOT WORK.
213547	Condition value retains in Select process box.
213544	SINGLE PROCESS BOX EXECUTION DOWNSTREAM FROM EXECUTED EXTRACT CAUSES TABLE OR VIEW DOES NOT EXIST ERROR
213543	Null values handled inconsistently in Derived Fields, Else statement in Derived Field
213541	Schedule task fails when flowchart name is changed
213535	User able to update offer in Optimize process box when MO-UC integration is on
213530	Campaign custom attribute in non English characters gets truncated when exported to mapped DB table in IBM Campaign
213529	ETL calculates treatmentinstid using TargetCellID count
212054	VERSION: 203553: Campaign custom attribute in non English characters gets truncated when exported to mapped DB table in IBM Campaign
208214	After applying fixpack 9114, the 'fields to log' disappear in the Log tab of response process box.
206338	Wrong message when same flowchart is opened in Edit mode by multiple users in IBM Campaign
205999	Copying/pasting ASCII characters from SQL Developer cause Campaign to be inaccessible
205997	IBM CAMPAIGN: CELLCODE IN TCS NOT CORRECTLY STORED
205995	Catalog window gets currpted if there are many objects
205992	Assigned Offers not displaying in Optimize PB
205991	Removing input from Segment process and then navigating to General tab doesn't remove segments, can cause segment mismatches
205990	Sorting by 'Start Time' or 'End Time' on Monitoring page may not yield correct sort order
205988	Using "Offer Folder" in Advanced Offer search does not work properly
205987	EMESSAGE -ETL calculates treatmentinstid using TargetCellID count
205986	Offer API default attributes not being populated
205985	IBM Campaign : Server side validation doesn't happen on Campaign offer page.
205984	Running select with input table that don't exists and extract process box (connected to snapshot), both connecting to merge causes 10404
205982	CUSTOM MACRO FOLDER NOT AT TOP OF THE MACRO FOLDER LIST IN THEQUERY HELPER
205981	CANNOT CLICK ON SCROLL BAR FOR SESSION FLOWCHARTS
205980	Display count of schedule keep increasing when we click Schedule button in a flowchart in IBM Campaign
205979	Table fields are not displayed in alphabetical order during table mapping

Table 6. Campaign fixed defects (continued)

ID	Fixed defect
205978	PO05072 LOG TAB DOES NOT SHOW IN THE CREATED THE DERIVED FIELD UNTILL YOU REFRESH
205973	STOP / PAUSE DISABLED WHEN USER HAS TEST RUN PERMISSION IN IBMCAMPAIGN
205972	String gets truncated in query builder if database column has hyphen.
205970	Copying process boxes to template does not work in Safari. Right mouse click unchecks all boxes in Safari
205969	Remapping user tables quickly can cause duplicate table mappings
205968	EMSSAGE -10404 Error thrown when eMessage Landing Page selected in Extract process
205967	Pull down menu of schedule shows same value multiple times, when the schedules button is clicked repeatedly.
205965	On schedule run screen the Detail column content is garbled
205963	Target Cell Spreadsheet doesn't display scroll bar for Select Box custom attribute values list
205962	Table column names are out of order when working in table column mapping dialog box
205961	Campaigns listing page doesn't have a functional scroll bar within "VIew a Tab" popup box for campaigns with large number of flowcharts
205959	IBM Contact Optimization :Execution of Optimize session with ACOOptAdmin.sh fails with error as "unable to connect to specified URL" 2
05958	Tracking contact history at a different audience level do not work in IC 9.0
205957	Clicking on the Schedules button several times very quickly will lead to displaying duplicate menus
205954	Copying/pasting ASCII characters from SQL Developer cause Campaign to be inaccessible
205953	Table Fields hanging out of the Box for Japanese User on IE 11
205952	IBM Campaign : Cell Attribute of 'Text Field - Numeric' type doesn't save Zero (0) value
205951	Audience sorting only works for primary audience level, not for any additional audience levels
205950	Ability to save table catalog with more than 64 characters, causes db error, unable to load any catalogs globally
205949	Issue while scheduling flowchart having Japanese characters
205948	Using chrome if you add segments to a segment process then try to move the first segment down, it messes up the list
205947	THE "UP1" AND "DOWN1" BUTTONS ON PERSONALIZATION TAB OF MAILLIST DO NOT WORK CONSISTENTLY WITH CHROME BROWSER
205946	Issue on sequence ordering on both snapshot & extract
205945	View log button is not working when using french - Also Unable to Open Campaign and Flowchart with french Char "ùûéêèëÿ"
205943	New field added in the contact and response history is not available for the existing flowcharts.
205942	THROTTLING DATABASE CONNECTIONS WITH THE MAXQUERYTHREADS PARAMETER ON DATASOURCE DOES NOT WORK.
205941	EMESSAGE -The selected field in eMessage process box gets changed automatically in IBM Campaign.
205940	Unica don't show parameters of offer in CallList tab
205939	Multiple selection in Profile Select Field applet is not working
205938	Offer Creation from template to use bind variables
205937	Cell attributes not sorting in alphabetical order
205936	IBM CAMPAIGN: ALL THE DIMENSION TABLES LISTED IN SELECT PROCESSARE NOT LISTED IN FLOWCHART REPORTS
205935	PO04374 TARGET CELL CUSTOM ATTRIBUTES NOT SCROLLING
205934	Null values handled inconsistently in Derived Fields, Else statement in Derived Field

Table 6. Campaign fixed defects (continued)

ID	Fixed defect
205933	SINGLE PROCESS BOX EXECUTION DOWNSTREAM FROM EXECUTED EXTRACT CAUSES TABLE OR VIEW DOES NOT EXIST ERROR
205932	Persistent derived field issue in french Locale
205931	Unable to Select multiple categories from "Values" in 9.1.0.3
205930	MAILLIST PROCESS BOX GIVING OPTION TO WRITE TO CONTACT HISTORYFOR TEST RUN IN IBM CAMPAIGN
205929	Editing Custom macro giving name conflict error
205928	Ability to save table catalog with more than 64 characters, causes db error, unable to load any catalogs globally
202203	Editing Custom macro giving name conflict error
202202	Ability to save table catalog with more than 64 characters, causes db error, unable to load any catalogs globally
199729	IBM CAMPAIGN: CROSS SITE SCRIPTING ISSUES USING THE NON SUPPORTED BROWSER FIREFOX
196876	Sensitive Parameters Passed In GET Request .
196328	SQL30081N TCP/IP SOCKET CLOSURE ERROR WHILE RUNNING UNICA_ACSVR PROCESS COMMUNICATES TO THE DB2 DATABASE
190160	Contact history combines separate cells into a single treatment
183490	Folder owner permissions not being respected for loading catalogs
176048	unica_acsvr process does not exited when login to platform and again logout from browser without going to Campaign page.
136811	Snapshot Process Up1/Down1 buttons don't always work properly and scrollbar jumps incorrectly when these buttons are used
130933	Scrollbar sliders do not move when clicked/dragged during table mapping/re-mapping
18991	If a user creates a flowchart in multi locales then persistent
17199	Offer attributes in wrong display

Chapter 4. Known issues in IBM Campaign 10.0

Campaign 10.0 includes the following known issues.

Table 7. Campaign known issues

ID	Known issue
239142	When the Audience process fails because of an incorrect Count filter expression, and the user removes the filter expression, adds a Condition, and runs the Audience process again, the process fails. The Condition is not considered and instead the previous Count filter expression is used resulting in the failure. To run the Audience process successfully, you must re-open the Audience process configuration window, click the Condition, Save and Close. The Audience process now considers the Condition and runs successfully.
229870	**The issue:** IBM Campaign 10.0 release installs IBM Global Security Kit (GSKit) version 8.0.50.41. IBM Global Security Kit (GSKit) is a common component that is used by a number of IBM products for its cryptographic and SSL/TLS capabilities. IBM Campaign installs IBM GSkit as a global level install. IBM Global Security Kit (GSKit) installation requires **root** user role in case of UNIX and **Administrator** user role in case of Windows machine. However, if IBM Campaign 10.0 installation or the upgrade is done with the non-root user role or the non-admin user role, then the IBM Global Security Kit (GSKit) will not be installed. IBM Campaign 10.0 installation log does not show any error message on failure of IBM Global Security Kit (GSKit) installation and with the SSL configured in the IBM Campaign v10.0 environment, the user will not be able to start the Campaign analytical Server. **Workarounds:** Run `IBM_Campaign_Crypto_10.0.0.0_IF02_<Operating_System>` command on the system where IBM Campaign analytical server is installed. This would install the IBM Global Security Kit. Ensure that you execute the command using **root** user role on UNIX and **administrator** user role on Windows. For detailed steps, refer to the IBM_Campaign_10.0.0.0_IF02_Readme.txt.
214084	The parenthesis ")" character used in a process box name shows incorrectly in Cell reports as a single right square bracket "]".
224257	**The issue:** You modify a campaign on the Campaign Summary page, then run **advSrchUtil** without opening and saving flowcharts in the campaign. The modified campaign configuration is not searchable in those flowcharts. This is a rare use case. Users typically open the flowcharts, make changes, and save. This problem does not occur for flowcharts that are saved after modifying the campaign summary configuration. **Example:** "Campaign A" has three flowcharts: FC1, FC2, and FC3. You change the description of "Campaign A" to include the word "IBM", then open FC3 and save it. You do not touch the other flowcharts. Now if you run **advSrchUtil**, searches for "IBM" will find FC3. However, the other flowcharts will not appear in the search results, because **advSrchUtil** did not reindex them (as their timestamp did not change). **Workarounds:** Use one of the following workarounds: • Delete the file `.advSrchUtil.last` in `<CAMPAIGN_HOME>/bin/` before running **advSrchUtil** to force indexing of all flowcharts in the given partition. • Open the flowcharts and save them before running **advSrchUtil**. • Use **unica_acsesutil** with the `-J` option to index individual affected session files.

213697	Campaign application images are not displayed when Campaign is deployed in WebLogic 12.1.1. To display images, add the following lines to the Campaign/WEB-INF/web.xml file:
	
	`<filter-mapping>`
	`          <filter-name>springSecurityFilterChain</filter-name>`
	`<url-pattern>*.svg</url-pattern>`
	`</filter-mapping>`

Table 7. Campaign known issues (continued)

ID	Known issue
220609	Deleting a flowchart displays the following error message: **Could not complete the requested operation.** org.apache.axis2.AxisFault: javax.xml.stream.XMLStreamException: White space is required between "SYSTEM" and the system identifier. See campaignweb.log on the web application server for details. Also see the listener log files: masterlistener.log and unica_aclsnr.log.
219602	Engage: Push process box execution failed when all mapped fields were marked as Sync fields. Push process box execution failed with the following error message: 21901: Internal error. Error received from IBM Engage: Error executing import of list. Details: Error Appending and Updating Recipients. Job id: This error occurred when user marked more than required fields as synch fields. From Campaign, users can mark the fields as Sync fields which are allowed as Sync fields from Engage database.
213733	When viewing Campaign reports from the **Campaign** > **Analytics** tab in PDF mode, the Reports drop-down list is hidden behind the reports view. This is a known issue with Microsoft Internet Explorer.
222234	Enabling temp tables blocks the execution of all process boxes and throws error " ORA-00942 :Table or view doesn't exist." This occurs when you open a flowchart for editing, choose **Advanced settings** > **Server optimization**, and uncheck **Disallow use of temp tables for this flowchart**. One of the reasons this error occurred is because the user changed the "TempTablePrefix" after the TEMP tables were allocated and being used in a flowchart. To overcome this error: 1. Users can clean up the temp table pool allocation to overcome this error. See https://www.ibm.com/developerworks/community/wikis/home?lang=en#!/wiki/W3a9d2a3c495a_47b6_97a9_e2b8f68b2e88/page/Understanding%20the%20TempTablePool% 20Feature%20for%20IBM%20Campaign 2. Disable temp table for that particular flowchart: Choose **Advanced settings** > **Server optimization**, and uncheck **Disallow use of temp tables for this flowchart**.
213372	Some searchable fields are not getting searched in the Extract process box. The Optimize list referenced in the Extract process box is not searchable in the Flowchart Advance Search feature.
204347	LARGE_DATA: Browser Crash - Mail List process box with 700 segments - Save with 512 offers to each segment.
220705	LARGE_DATA: Profiling count for Dimension table fields is incorrect and profiling percentage displayed 100% but profiling is in progress.
222087	Offer folders are not replicated on other cluster nodes of Campaign web application.
213600	User DB Testing: Amazon Redshift: Incorrect cell size on Select process box when In-DB optimization is enabled.
211253	File-based input with multiple columns containing date in different format does not read the date correctly.
221771	Derived field with value 40.68 when exported to new Snapshot table - lost the precision.
213525	HP Vertica: Error while exporting data from table with Boolean data type.
212890	Boolean type column on Amazon Redshift is recognized as 'Test' field type in table mapping.
194989	Campaign server process crashed with error 10404 while executing Segment process box. Workaround: For all Segment process boxes that have **Create Extract tables** checked: 1. Uncheck the **Create Extract tables** option in the Segment process box. 2. Add an Extract process box downstream of the Segment process box and use this extract output in subsequent processes.

Table 7. Campaign known issues (continued)

ID	Known issue
198739	Track and Response process box execution failed with error 10404 and a stack trace was generated when **Use In-DB Optimization** was selected under flowchart Advanced Settings. Workaround: Disable **Use In-DB Optimization** in the flowchart that contains the Track or Response process box along with other process boxes. If that is not possible, create a new flowchart and configure only Select and Track and /or Response in the new flowchart and you can enable **Use In-DB Optimization** here.
185658	Big data: Unable to copy data to big data output tables when loader delimiter is "\t" Hive-based Hadoop big data does not support the Tab (/t) character. Do not use the Tab character as the LoaderDelimiter value (Campaign|partitions|partition[n]|dataSources|dataSourcename).
194575	Big data: Segment process box execution fails with error when **Create Extract Tables** option is checked. Workaround: Extract within Segment can be achieved by placing the Extract process downstream of the Segment process.
NA	Big data: The temporary data file upload location on the Hive server must be /tmp. The property **LoaderPreLoadDataFileCopyCmd** (Campaign|partitions|partition[n]|dataSources|dataSourcename) is used for Hive-based Hadoop data sources (BigDataODBCHiveTemplate). This property uses SCP to copy data from IBM Campaign to a temp folder on the Hive-based Hadoop system. Currently, the location must be called /tmp. This must be the file system location, not the HDFS location.
175825	When **defaultBehaviorWhenOutputToFile** is set to **Create New File**, it works only when you select a new output (export) file for the first time. If you try to change the existing output file and select a new output file, then the option **Append to Existing Data** gets selected by default. It can be changed manually to **Create New File**.
176876	If you input more than 21 DBCS characters into a **User Variable Name**, the following error message occurs: `11532 Length Exceed Error: User Variable Name exceeds 64 characters for UserVar at location[0]`
178526	You can safely ignore the following non-fatal error in the `Campaign_Install.log`. The error is logged if you interrupt and then restart the Campaign installation. "com.unica.install.ia.custom.ManagerReadConfigurationStatus: ERRORAdditional Notes®: ERROR - class com.unica.install.ia.custom.ManagerReadConfiguration NonfatalInstallException The processing instruction target matching "[xX][mM][lL]" is not allowed."
NA	Mail List process box gets unconfigured with error "31606: History table are changed" on Flowchart run. 1. There is no issue if the history tables are mapped prior to building a flowchart and adding a Mail List process. 2) If you do not follow step 1, you can still map the history tables after the error appears. If you edit the flowchart and configure the process box, the process will run.
NA	After migrating non-ASCII data to Campaign 8.6, in some cases you cannot open Campaign flowcharts on the target system. Session flowcharts open successfully. To work around this issue, remigrate the campaigns in overwrite mode. You can then open the flowcharts.
2968	Hot keys are not implemented on most of the windows. In the Dojo implementation it is not possible to use keyboard shortcuts to activate certain functions. Instead the user must click buttons.
13460	When the Export to File option is unchecked on the Fulfillment tab of the Mail List process box, the Summary File option is enabled but should not be.
TT DEF062333	Information related to associated products does not appear in offer on Marketing Operations. When an offer created in Campaign with products associated with it is imported in Marketing Operations, information about the associated products is not available in Marketing Operations.
TT DEF063392	Clicking "Return to previous page" distorts the UI in some cases. Use the links within the products to navigate, rather than the browser controls.

Table 7. Campaign known issues (continued)

ID	Known issue
75262	Clicking "Return to previous page" distorts the UI in some cases. Use the links within the products to navigate, rather than the browser controls.

Chapter 5. Known limitations in IBM Campaign 10.0

Campaign 10.0 includes the following known limitations.

Table 8. Campaign known limitations

ID	Known limitation
232032	You can start only one IBM Campaign listener on one server (machine).
217488	IBM can support the Database Loader for Redshift until the moment Campaign triggers the Loader Script. Any problems in execution of the loader script are not supported by IBM.
222934	Search performance on the Advanced Search UI: The time for search results to appear on the UI, when the page size is 500 is somewhat long. For example, it takes about 30 seconds on IE11. For other page sizes, such as 10 (default), 25, 50 and 100, the performance is good.
213088	If IBM Campaign is installed in a secured environment but IBM Cognos is in an unsecured environment, Cognos reports will not display when you use Microsoft Internet Explorer 11. Workaround: If IBM Campaign is configured with HTTPS, also configure IBM Cognos on HTTPS.
211293	In IBM Campaign, the built-in macro Current_Date() results in an error when executed against a Hive 1.2 based Big Data instance. The Hive ODBC driver does not support the CURRENT_DATE macro to obtain interval values. For example, executing the following query results in a Hive error: SELECT DISTINCT customerid FROM Customer_date WHERE ((Customer_date.my_date_mmdyyyy - CURRENT_DATE()) >= 7) Error: Hive 2 Internal error: unsupported conversion from type: interval_day_time Workaround: To use the CURRENT_DATE function in a RAW SQL query on Hive with Hortonworks, execute SQL in the following format: SELECT DISTINCT customerid FROM Customer_date WHERE (current_date() - my_date_mmdyyyy) = interval '0 0:0:0' day to second
NA	Big data: To perform the UPDATE operation on any process boxes in a flowchart, ensure that your HIVE tables are configured as transactional tables such that they support the ACID property. This is a key feature introduced in HIVE version 0.14.
190621	Big data: Campaign with Hive big data as a user database does not support user table mapping with Base and Dimension levels up to the fourth level hierarchy. If you map a Base record table with four levels of dimension tables in a Select process box, then build a query based on the fourth level Dimension table, the query fails with Error 11528. This issue should not affect big data users because multiple dimensions should not be needed. By definition, a big data source has a large table of records split across Hadoop nodes (such as HDFS).
185854	Big data: Campaign integration with Hadoop-based Hive big data as a user data source is not tested on MS Windows operating system.
194095	For Redshift database, the error message "Unsupported type timestamps with time zone" is displayed when exporting data from a Snapshot process box. Timestamp with timezone is an unsupported PostgreSQL data type on Amazon AWS.
194806	BLU: Snapshot process box execution fails with error when records are exported with option **Replace All Records**. The error occurs with BLU DB2 database and only when **Replace All Records** is selected. It does not occur for **Append to Existing**.
NA	IBM Interact when configured with IBM WebSphere Application Server: You must configure IBM WebSphere JVM to use JDK 1.7. When IBM WebSphere Application Server 8.5.5.x is configured with JDK 1.7 and HTTPS communication, you must use IBM JAVA SDK version 7.0.8.10 or higher.

Table 8. Campaign known limitations (continued)

ID	Known limitation
NA	Using multiple SQL statements for raw SQL queries is not currently supported on big data user datasources. For related information, search the IBM Knowledge Center for *Hive query language conformance*.
195581	While running a Campaign flowchart, if listener crashes or is stopped, user is not able to access the running flowchart from the UI. Requests are being served by another node of the cluster but while accessing the flowchart, a pop-up message says "listener failover occurred..." It may be necessary to restart the master listener.
196487	DataDirect + Cloudera: Snapshot process box execution fails when some of the output table column fields are not mapped. This is related to a known issue with the Hive 0.14 database. Workaround: To extract fewer than the fields in the mapped database table, fill them with derived fields or uservars and fill them with the default desired values, such as NULL.
184919	Big data: Mail List process execution fails with error: unique constraint (UCDUC9111.CCONTACTHIST_PK) violated. Mail List / Call List process box execution completes successfully when User Database table - Audience Level is BigInt. However: • When a user profile table contains Audience ID in Decimal format, this error will occur. • When a user profile table is created by export from File to Database then by default all numeric fields are created as Decimal. For big data: The user profile database table audienceID should be of BigInt type when used with DB2 databases. If the user profile database table audienceID is Decimal, the Mail List / Call List process box execution will have errors.
186489	Big data: "Record exported = Unknown" is displayed on Snapshot process box if cell size Limit is used in preceding Select process box. (1) Count of records is unknown when a Snapshot is populated through INSERT INTO SELECT FROM queries. If you want a record count, map it as Base table, in which case Campaign will compute the record count. (2) Count of records will be known and updated in case of loader (LOAD DATA) invocation. No need to map the table.
NA	Flowchart annotations are not affected by zoom. You cannot resize annotations. Annotations do not appear in the panning area. Annotations can be moved out of the flowchart window and the only way to access them is to move the associated process box in the direction of the annotation, then drag the annotation back to the main flowchart area and move the process box back to its original position. If an annotation overlaps a process box, drag the annotation to another position.
176377	DB2 10.5 BLU for user DB: No indexing requirement for temp tables in Campaign datasource. DB2 10.5 (with BLU feature ON) does not require indexing in Campaign. Campaign has certain properties for datasources, such as TempTablePreTruncateRunScript, TempTablePostExecutionSQL, and PostTempTableCreateRunScript, where you can provide SQL or scripts to create indexes on user database tables. If you are using DB2 10.5 as a customer database, with the BLU feature ON, you do not need to configure any of these temp table properties.
NA	Dialog behavior: In certain cases, it is necessary to click twice in order to activate a field or change a field value.
NA	The **monitorEnabledForEmessage** configuration property in **Campaign | monitoring** is not currently used.
NA	Relevant products limitation: When offer management is performed from IBM Marketing Operations, the "relevant products" functionality, which relates product IDs to offers, is not available.

Table 8. Campaign known limitations (continued)

ID	Known limitation
NA	Blank or incorrect results from derived fields in a Mail List process. This can occur in a process box that uses a derived field that calls a Generated field (UCGF) that changes value. Do not use a UCGF in a Mail List derived field if the UCGF is not constant. Also, from the Parameters tab, do not create a derived field to call a UCGF to populate offer attributes. For details, see the following Tech Note: http://g01zciwas018.ahe.pok.ibm.com/support/dcf/ preview.wss?host=g01zcidbs003.ahe.pok.ibm.com&db=support/swg/istech.nsf &unid=C4A93DC0ED188D6985257A6B00699C45&taxOC=SSCKNRB&MD=2012/08/31%2015:08:35&sid=
NA	Profiling a Campaign Generated Field (UCGF) does not yield correct results. Some UCGFs have a value according to the cell or the offer being processed. For cell-related UCGFs, only the value associated with the first cell appears during profiling.
NA	The default value for a custom cell attribute does not appear when you open the target cell spreadsheet. Although the default value is not initially displayed, it will be used. The value can be displayed or changed by clicking or opening and editing the custom cell attribute in the target cell spreadsheet.
NA	The **UA_UsrResponseType.Name** field cannot contain a left parenthesis followed by a single quote.
NA	Use unique `TempTablePrefix` for each data source when mapping multiple data sources to same physical database. If you mapped multiple data sources in Campaign to the same physical database, and you use the same `TempTablePrefix` for more than one of the data sources, when you use the cleanup utility to delete orphaned temp tables, it may falsely identify temp tables as orphaned, when they are in fact legitimate temp tables defined from a different Campaign data source. Any deleted temp tables will automatically be recreated when you rerun affected flowcharts, but as a best practice, use a unique `TempTablePrefix` for each data source when mapping multiple data sources to the same physical database. If the data sources defined in Campaign map to different schemas in the database, another solution is to ensure that the database user who runs the cleanup utility does not have privileges to drop tables in other schemas in the same database.
11162	Several dialogs that might not contain a large amount of data or are not commonly used cannot be resized or maximized.
17202	Error 19024: Cannot delete segment folder if the segment was deleted from the folder. A segment that is deleted from a folder remains as an inactive segment in the folder. Folders with inactive segments cannot be deleted. This is working as intended.
18991	If the same flowchart is edited in multiple locales, undesired behavior can occur. This situation occurs only if two (or more) users with different language settings edit the same flowchart. Users with different locales should not edit the same flowchart that was created by a user with a different locale since this can lead to undesired behavior. The preferred approach is to create and edit flowcharts with users having the same language settings.
84147	Copy and paste behavior in process boxes and other dialogs: For security reasons, some browsers do not allow applications to copy and paste via the Clipboard. This affects the General tab of the Segment process configuration and other areas of the application where copy and paste might be used.
161323	The error "Login failed. Error 10553" can occur if you try to log in to the Campaign utilities when the **IBM Marketing Platform	Security	login** method is set to **Windows integrated login** or **Web access control**. To avoid this issue, change the login type to **LDAP** or **IBM Marketing Platform** prior to using the Campaign utilities.
201968, 200241	If two process boxes are moved very close together in a flowchart, the direction of the connection arrow changes. This limitation affects the visual representation of the arrow. The process data flow is not affected. The workaround is to move the process boxes farther apart so the arrowhead changes back to the correct direction.

Chapter 6. IBM Campaign Reports Package

The Campaign Reports Package delivers reporting schemas that you can use to track campaign, offer, and cell performance. To use the Reports Package, Campaign must be integrated with IBM Cognos

For more information, see the *IBM Marketing Software Reports Installation and Configuration Guide* that is supplied with IBM Marketing Platform.

The IBM Campaign Reports Package contains the following items:

- Schemas that are registered with IBM Marketing Platform during installation. They describe the attributes and metrics that represent the product's reporting schema and include:
  - Base schemas that are the basis of the reporting schema (with no custom attributes)
  - Custom versions of most of the base schemas that rely on the preconfigured custom attributes for Campaign
  - Templates that you can use to create new schemas
- IBM Cognos customizable model and reports to be deployed on an IBM Cognos BI Server
- Reference documentation that describes the IBM Cognos model and the reports. Documentation can be found in the directory `ReportsPackCampaign\cognos10\CampaignDocs`.

The Campaign reports retrieve data from one data source: the Campaign system tables.

Reporting Schemas

The following reporting schemas are provided:

- Campaign Views provides the standard attribute views of the Campaign system tables (campaign, offer, cell, and so on).
- Campaign Custom Attributes is for reporting on custom attributes of campaigns, offers, and cells.
- Campaign Performance is used by reports that display performance measurements starting at the campaign level over all time or various periods of time (days, months, and so on).
- Offer Performance is used by reports that display performance measurements starting at the offer level over all time or various periods of time (days, months, and so on).
- Campaign Offer Response Breakout is used by reports that show campaign and offer responses based on response types.
- Campaign Offer Contact Status Breakout is used for measurement of campaign and offer contacts based on contact status.

The custom schemas extend the last five of the listed schemas to include the default, preconfigured response types, custom attributes, and so on.

Templates

If you have additional audience levels, you can create additional reporting schemas for them with the following templates:
- Campaign Views
- Campaign Custom Attributes
- Campaign Performance
- Offer Performance
- Campaign Offer Response Breakout
- Campaign Offer Contact Status Breakout

Reports

The reports package contains Cognos example reports that can be accessed from the Analytics menu or the Analysis tab for a campaign or offer. Reports can also be displayed in portlets on the Dashboard.

The following campaign-specific example reports are available from the Campaign Analysis tab:
- Campaign Detailed Offer Response Breakout
- Campaign Financial Summary by Offer (Actual)
- Campaign Offer Performance by Month
- Campaign Performance Summary by Cell
- Campaign Performance Summary by Cell with Revenue
- Campaign Performance Summary by Offer
- Campaign Performance Summary by Cell and Offer
- Campaign Performance Summary by Cell and Offer (with Revenue)

The following offer example reports are available from the Offer Analysis tab:
- "What If" Offer Financial Summary
- Offer Performance by Day
- Offer Performance Summary by Campaign

The following cross-object example reports include information about multiple objects in Campaign. These reports are available from the Campaign Analytics page.
- "What If" Offer Financial Summary
- Campaign Detailed Offer Response Breakout
- Campaign Financial Summary by Offer (Actual)
- Campaign Offer Performance by Month
- Campaign Performance Comparison
- Campaign Performance Comparison (with Revenue)
- Campaign Performance Comparison by Initiative
- Campaign Performance Summary by Cell
- Campaign Performance Summary by Cell (with Revenue)
- Campaign Performance Summary by Cell by Initiative
- Campaign Performance Summary by Offer
- Campaign Performance Summary by Offer (with Revenue)

- Campaign Performance Summary by Cell and Offer
- Campaign Performance Summary by Cell and Offer (with Revenue)
- Campaign Summary
- Offer Campaign Listings
- Offer Performance by Day
- Offer Performance Comparison
- Offer Performance Metrics
- Offer Performance Summary by Campaign

The following campaign-specific example report portlets are available on dashboard pages:
- Campaign Response Rate Comparison
- Campaign Return on Investment Comparison
- Campaign Revenue Comparison by Offer
- Offer Response Breakout
- Offer Response Rate Comparison
- Offer Responses for Last 7 Days

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If you encounter a problem that you cannot resolve by consulting the documentation, your company's designated support contact can log a call with IBM technical support. Use these guidelines to ensure that your problem is resolved efficiently and successfully.

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Before you contact IBM technical support, gather the following information:
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- Detailed error messages that you see when the issue occurs.
- Detailed steps to reproduce the issue.
- Related log files, session files, configuration files, and data files.
- Information about your product and system environment, which you can obtain as described in "System information."

System information

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