

CA Gen Update 2014 - APAC Product Update and Roadmap

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Agenda

- Organizational Changes
- Agile @ CA
- CA Gen Overall Strategy
- CA Gen Roadmap
 - Recent releases
 - Planned releases
- Q&A
- Features Demonstration

Organizational Changes



Reorganizations, Restructuring, and Retirements

- Russ LeClaire retired
- Andy Wyatt left the company (again)
- Jean Rissmiller moved over to Chorus
- Increased CA Gen headcount in India Technology Center
- Formed a new Application Development Business Line

Application Development Business Line Components

- Software Configuration Management Tools
- Test Tools
- Application Development Tools

Application Development Business Line Product Management

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Agile @ CA



Communities.ca.com - Ideas

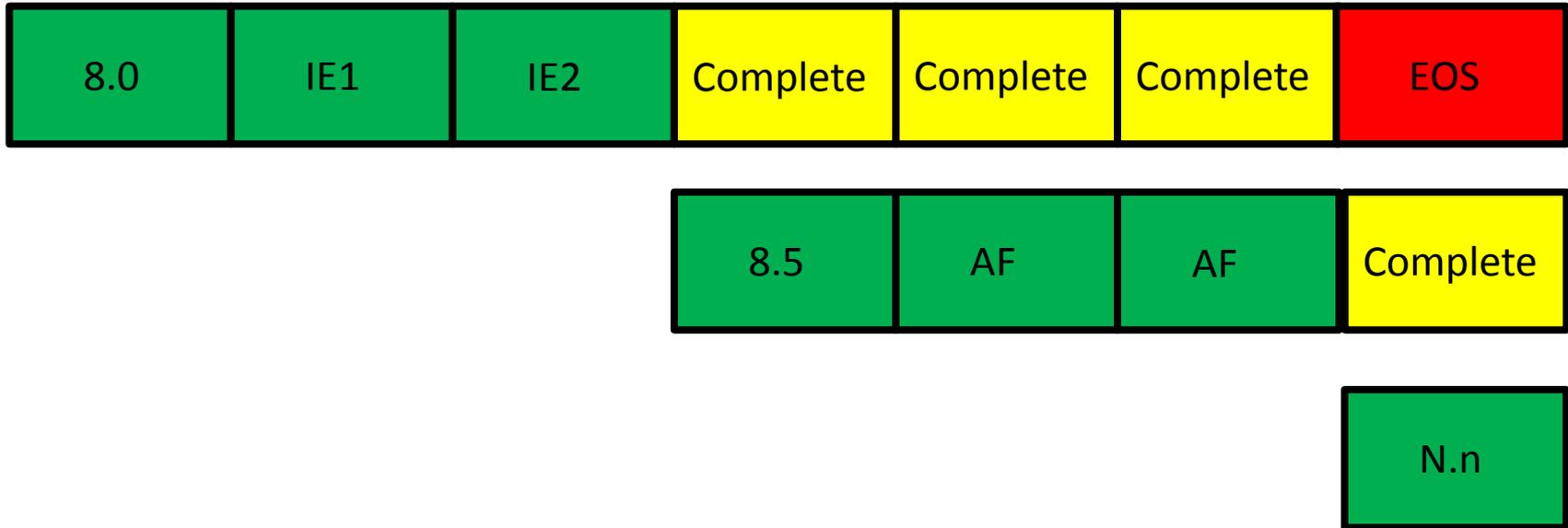
The screenshot displays the 'CA GEN EDGE' community page. At the top, there is a navigation bar with links for Products, Services, Support, Insights, Communities, and Partners. Below this is a secondary navigation bar with Home (4), Content, People, Communities, Help, and Apps. A search bar is located on the right side of this bar. The main header features the 'CA GEN EDGE' logo and a 'Following in 1 stream' indicator. Below the header, there are tabs for Overview, Content, People, Subcommunities, Reports, and Calendar. A yellow announcement banner reads 'ANNOUNCEMENT: Webcast: CA Gen 8.5: Toolset Ease of Use Enhancements'. At the bottom, a content filter bar shows various content types: All Content (712), Blog Posts (0), Documents (558), Discussions (135), Polls (0), Videos (0), Ideas (16), and Events (3). The 'Ideas (16)' filter is circled in red. A 'Filter by action' dropdown menu is set to 'None'.

Ideation process

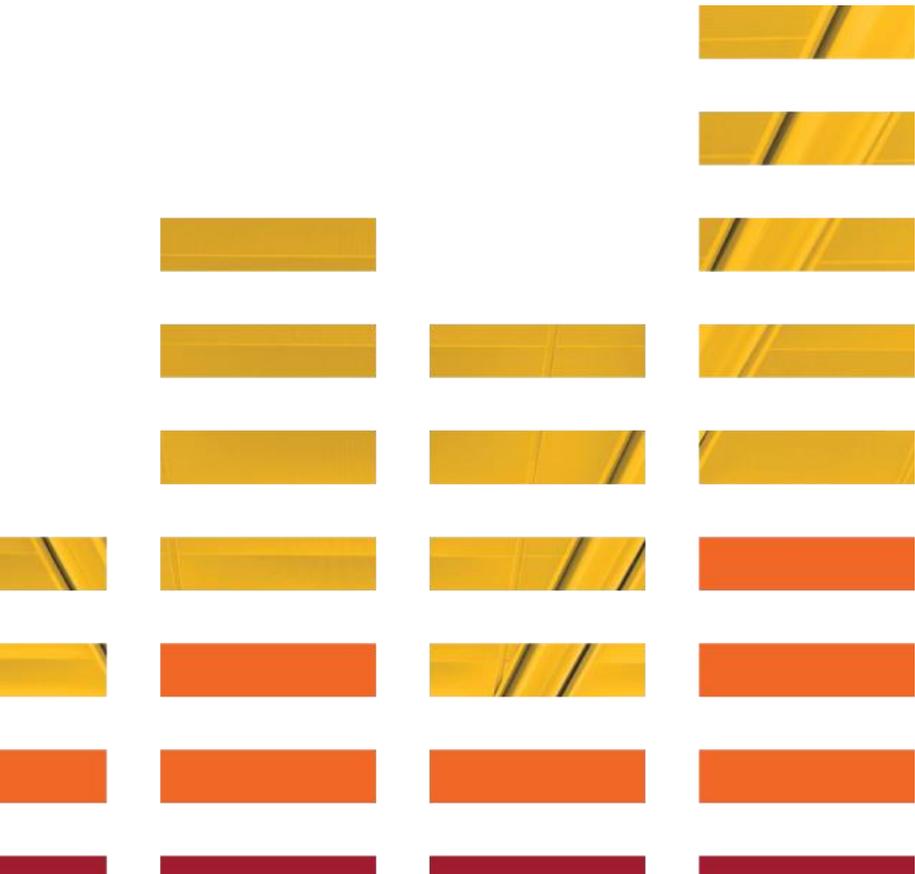
- Periodically we will review the Ideas and the top-rated Ideas will be added to the Gen backlog as either Epics or Stories
- Stories are worked on in Sprints
- At the end of each Sprint we review progress with customers
- Customers provide feedback
- Customers get access to the software
- Customers must signup for the ***Customer Validation Program***



Support - Incremental and Complete Releases

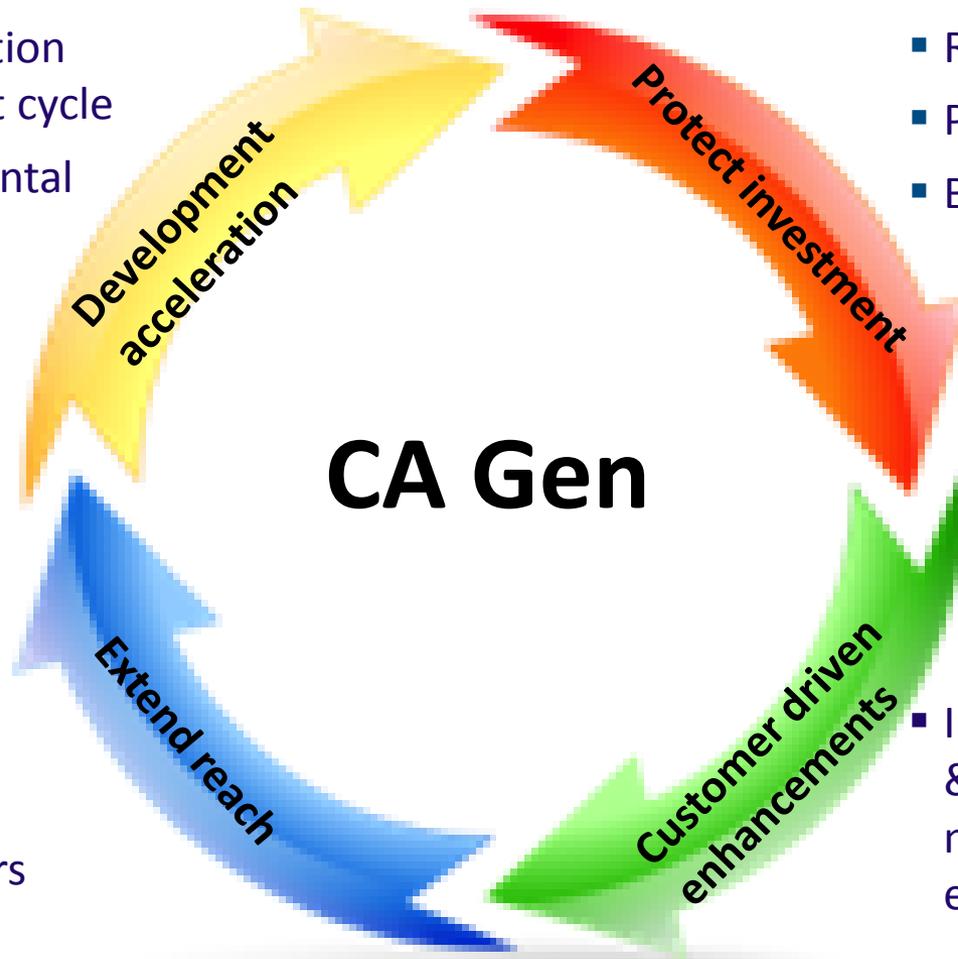


CA Gen Overall Strategy



CA Gen Strategy Plan

- Customer collaboration during development cycle
- Complete / Incremental Release Plan

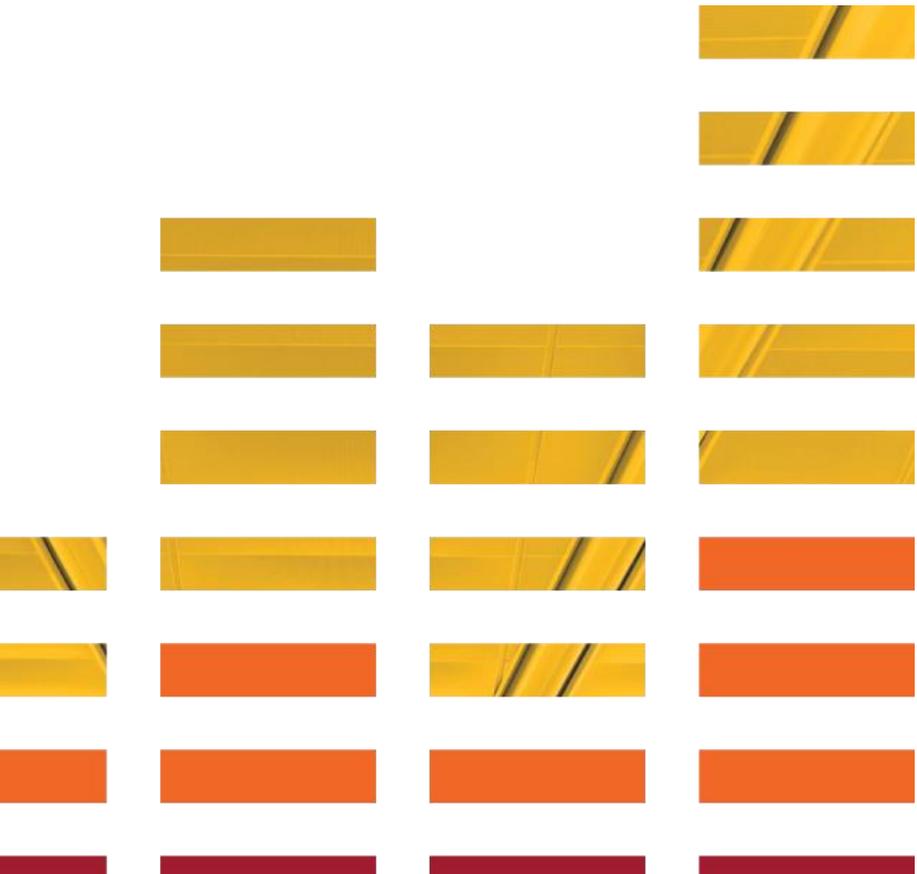


- Reliability & stability
- Predictability
- Backward compatibility

- Web Services
- Gen Studio
- New name customers

- Interact with customers & partners to determine new features and enhancements

CA Gen Roadmap



Recent Releases



Recent Releases

CA Gen 8.0

- Release each of last three years
 - CA Gen 8.0 May 2010
 - Interim Enhancement - 1 April 2011
 - Interim Enhancement - 2 January 2012
- Interim Enhancements (IE) added functionality to the active release
- Over 23 certifications to date for CA Gen 8.0 keeping the release relevant
- End of Service anticipated May 31, 2015

Features in CA Gen 8.0

slide 1 of 2

- Support Dynamic RI Triggers for Blockmode and Servers
- Created zLib for Blockmode and Servers
- Multi-socket listener
- DB2 package bind enhancements
- Multi-row fetches
- Larger models and subsets
- New READ / READ EACH statement relational operators
 - In
 - Between

Features in CA Gen 8.0

slide 2 of 2

- Identity columns (auto number)
- Compatible release runtimes
- Gen Studio
- Web Enhancements
 - Web View

Features in CA Gen 8.0

Multi-Row Fetch

- Default is to not generate a Multiple Row Fetch
- Option to use the value of the targeted group view to specify the number of rows to be returned
- Specify a range of 2 to 32,767 rows to be returned

The screenshot shows the 'READ EACH Properties' dialog box with the 'DB2' tab selected. The 'Multiple Row Fetch' section is highlighted in yellow. The options in this section are:

- Do not generate a Multiple Row Fetch.
- Use TARGETING value, when present.
- Use the value:

Other sections in the dialog include:

- Distinct:**
 - Always generate cursor with Distinct
 - Never generate cursor with Distinct (may allow duplicates)
 - Use default algorithm to determine if Distinct is required
- Limit to N rows (For DB2 z/OS, MS/SQL and Oracle Only):**
 - Do not limit the number of rows returned.
 - Use TARGETING value, when present.
 - Use the value:
- Optimize for N rows (For DB2 Only):**
 - Do not generate OPTIMIZE clause.
 - Use TARGETING value, when present.
 - Use the value:
- Select Clause Isolation Level (For DB2 and SQL/MP Only):**
 - Repeatable
 - Read Stable
 - Cursor Stable
 - Uncommitted / Browse
 - Do Not Specify
- For DB2 Only:**
 - Generate with cursor hold.

Buttons at the bottom: OK, Cancel, Help.

Features in CA Gen 8.0

Larger Models and Subsets

- Prior to this change, you could only download models and/or subsets containing fewer than 64,000 of any object type
- Examples of object types include;
 - Views
 - Attributes
- After this change, you can download models and/or subsets containing as many as 1,000,000 of any object type

Features in CA Gen 8.0

New READ / READ EACH statement relational operators

Add Statement

```
READ EACH golfer
  TARGETING
  export_group_of_golfers FROM THE BEGINNING UNTIL FULL
  WHERE DESIRED golfer handicap_index
```

Select a relational operator.

- IS EQUAL TO
- IS NOT EQUAL TO
- IS EQUIVALENT TO
- IS NOT EQUIVALENT TO
- IS GREATER THAN
- IS LESS THAN
- IS GREATER OR EQUAL TO
- IS LESS OR EQUAL TO
- IS VALID
- IS NULL
- IS NOT NULL
- IS BETWEEN**
- IS NOT BETWEEN**
- IS IN
- IS NOT IN

Add Complete Qualify View Maintenance Cancel Help

Features in CA Gen 8.0

New READ / READ EACH statement BETWEEN operators

```
XXX_READ_EACH_BETWEEN
IMPORTS:
EXPORTS:
  Group View export_group_of_golfers (1000,implicit,export only)
  Entity View export_grp golfer (transient)
    userid
    password
    first_name
    last_name
    email_address
    handicap_index
LOCALS:
ENTITY ACTIONS:
  Entity View golfer
    userid
    password
    first_name
    last_name
    email_address
    handicap_index

  READ EACH golfer
    TARGETING export_group_of_golfers FROM THE BEGINNING UNTIL FULL
    SORTED BY ASCENDING golfer handicap index
    WHERE DESIRED golfer handicap_index IS BETWEEN (0, 10.0)

  MOVE golfer TO export_grp golfer
```

Features in CA Gen 8.0

New READ / READ EACH statement IN operators

```
XXX_READ_EACH_BETWEEN
IMPORTS:
EXPORTS:
  Group View export_group_of_golfers (1000,implicit,export only)
  Entity View export_grp golfer (transient)
    userid
    password
    first_name
    last_name
    email_address
    handicap_index
LOCALS:
ENTITY ACTIONS:
  Entity View golfer
    userid
    password
    first_name
    last_name
    email_address
    handicap_index

  READ EACH golfer
    TARGETING export_group_of_golfers FROM THE BEGINNING UNTIL FULL
    SORTED BY ASCENDING golfer last name
    WHERE DESIRED golfer last name IS IN ("Short", "Wie", "Woods", "Norman",
      "Poulter", "Player", "Sorenstam", "Palmer")

  MOVE golfer TO export_grp golfer
```

Features in CA Gen 8.0

Identity Columns (aka Auto Number)

The screenshot shows the 'GOLFER - Attributes' dialog box. On the left, a tree view lists attributes for the 'GOLFER' entity: 'INSTANCE_ID', 'USER_ID', 'PASSWORD', 'FIRST_NAME', 'LAST_NAME', 'EMAIL', and 'HAI'. The 'INSTANCE_ID' attribute is selected, and its properties are displayed in the main area.

INSTANCE_ID Properties

Attribute Name:

Category: Optional Varying Length

Domain: Protected

Length: Decimal Places:

Technical Design Properties

TD Name:

Set TD name to the attribute name

Implement in C, C# and Java with decimal precision

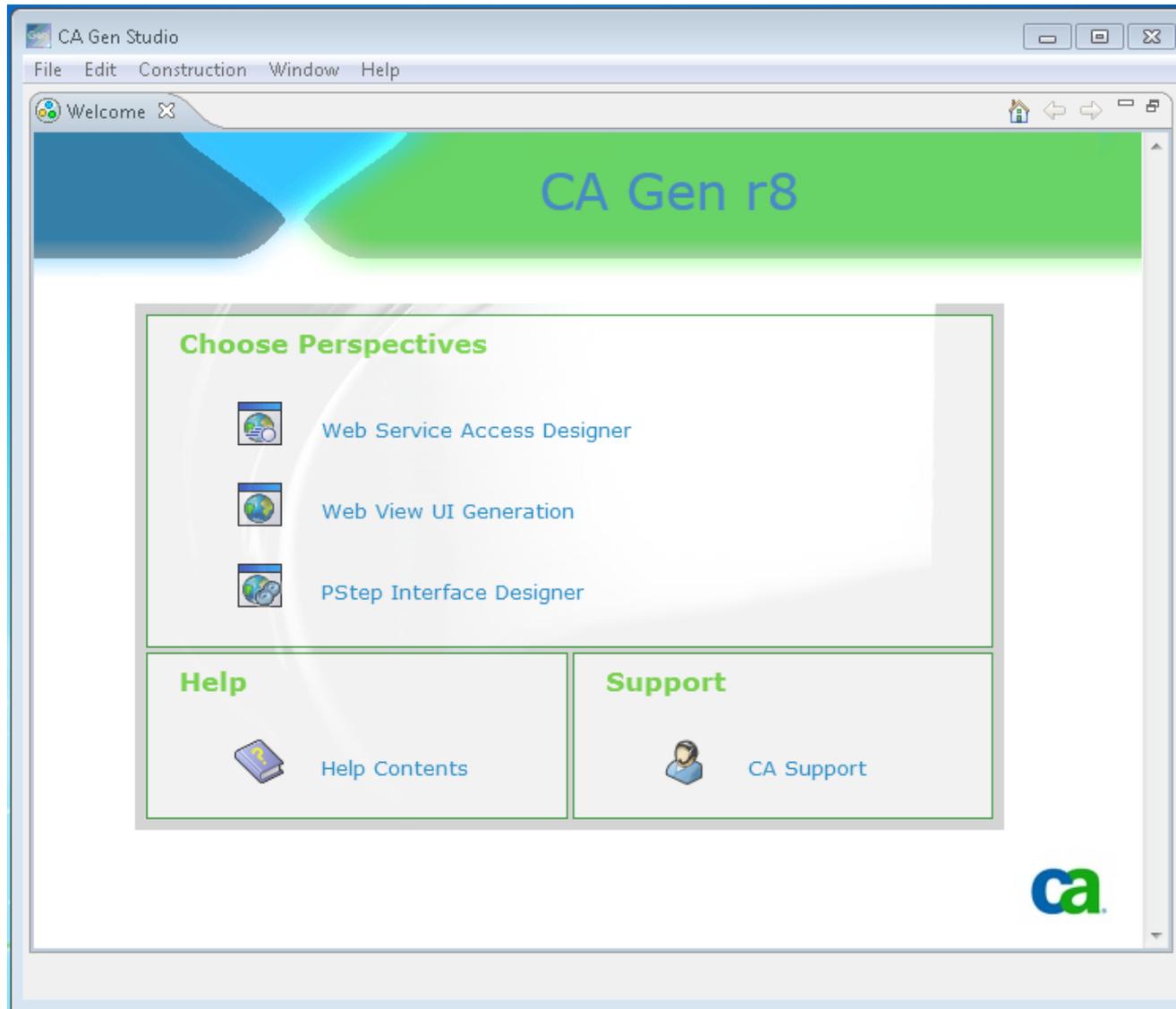
COBOL Data type:

Messages:

Auto Number attributes are valid only for DB2 z/OS, DB2 UDB, MS/SQL and Oracle.

Buttons: OK, Description..., Cancel, Help

Features in CA Gen 8.0 Gen Studio



Features in CA Gen 8.0 Interim Enhancement - 1

- Visual Studio 2010
- Mozilla Firefox
- JBoss
- Web View Customization (UI)
- Support Dynamic RI Triggers for Batch
- Support for zLib for Batch
- Performance improvements in z/OS Batch Processing

Features in CA Gen 8.0 Interim Enhancement - 2

- Support 64-bit Windows Servers
- Custom Proxies
- Increased CFB Limit from 32K to 16MB (except for Mainframe)

Features in CA Gen 8.0 IE2

Gen Studio – Custom Proxies and Web Services

The screenshot displays the CA Gen Studio interface. On the left, the 'PStep Interface Designer' shows a tree view of the project structure, including 'CALCULATOR.IEF' and its sub-components: 'S_CALCULATOR', 'div2nbr', 'mul2nbr', 'sub2nbr', and 'add2nbr'. The 'mul2nbr' component is selected.

The main area shows a table of parameters for the selected 'mul2nbr' component. The table has the following columns: Parameter, Gen Name, Gen Attribute, XSD Data T..., Mapping S..., and Mapping.

Parameter	Gen Name	Gen Attribute	XSD Data T...	Mapping S...	Mapping
clientPassword	clientPassword	Text(256)	string	<None>	
clientId	clientId	Text(256)	string	<None>	
command	command	Text(80)	string	<Literal>	MULTIPLY
dialect	dialect	Text(8)	string	<None>	
exitState	exitState	Numeric(10,0)	int	<None>	
nextLocation	nextLocation	Text(256)	string	<None>	
ImportCalcCalculator	ImportCalcCalculat...				
Operation	Operation	Text(10)	string	<None>	
Num2	Num2	Numeric(10,2)	decimal	<Variable>	
Num1	Num1	Numeric(10,2)	decimal	<Variable>	

Below the table, there are tabs for 'Input Mapping' and 'Output Mapping'. At the bottom, the 'Properties' and 'Problems' panes are visible. The 'Problems' pane shows '0 errors, 5 warnings, 0 others' and a table with columns: Description, Resource, Path, Location, and Type. A warning icon is present next to the text 'Warnings (5 items)'.

Features in CA Gen 8.0 IE2

CFB Extension

Increased the amount of customer data that can be sent between CA Gen clients and Distributed Servers using Common Format Buffer (CFB) from 32K to 16MB

- Windows
- Unix & Linux
(TCP/IP, MQ & Tuxedo)



Recent Releases

CA Gen 8.5

- Releases
 - CA Gen 8.5 May 2013
 - Agile Features Continuous
 - Interim Enhancement - 1 September 2014
- Agile Features and one last Interim Enhancement added functionality to the active release
- Over 70 DARs were implemented in this release
- End of Service not announced

Features in CA Gen 8.5

- Increased CFB Limit from 32K to 16MB for Mainframe (all platforms)
- BLOBs – added CRUD actions and View passing
- Support 64-bit Unix/Linux Servers (all Distributed Servers)
- DB2 Table and Table Space partitioning
- CA Gen Studio Web View - full generation
- SOAP Middleware
- Transaction Enabler (TE) Web Services

Features in CA Gen 8.5

CFB Extension

Increased the amount of customer data that can be sent between CA Gen clients and Mainframe Servers using Common Format Buffer (CFB) from 32K to 16MB

- z/OS CICS (TCP/IP & MQ)

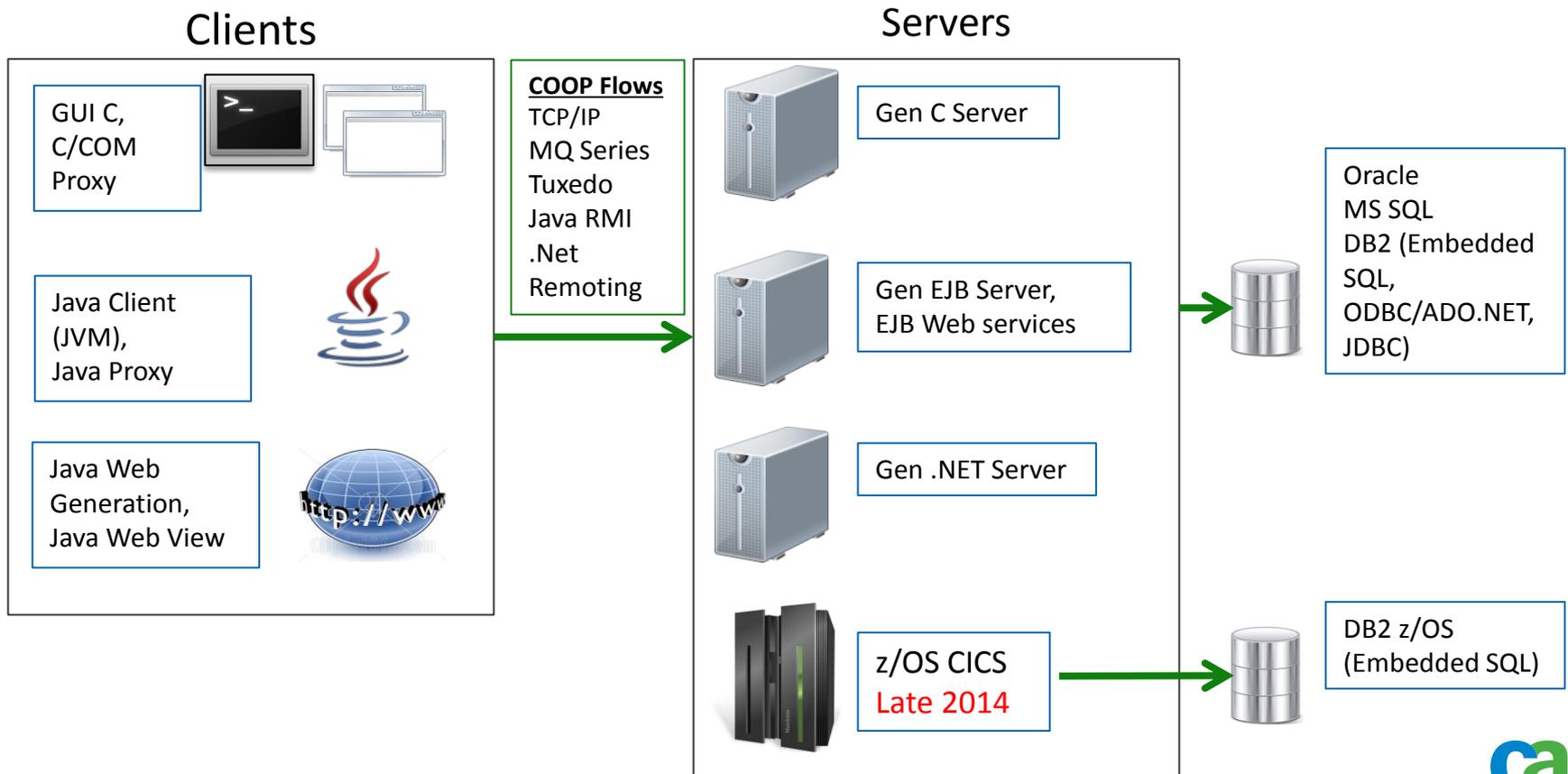


Features in CA Gen 8.5

BLOB Support for Cooperative Applications

Support for binary large objects for generated applications

- Create, Read, Update, and Delete entity types containing BLOB attributes
- View support



Features in CA Gen 8.5

Attribute Properties - BLOB

The screenshot shows the "(new object) Properties" dialog box for a BLOB attribute. The "Attribute Name" is "image". The "Category" is "Basic". The "Domain" is "BLOB". The "Length" is "2" MB. The "Decimal Places" is "0". The "Optional" and "Varying Length" checkboxes are checked. The "Case Sensitive" and "Protected" checkboxes are unchecked. The "Technical Design Properties" section includes a "TD Name" field, a checked "Set TD name to the attribute name" checkbox, an unchecked "Implement in C, C# and Java with decimal precision" checkbox, and a "COBOL Data type" dropdown set to "Default". The "Messages" section contains a text box with the message: "BLOB attributes are valid only for DB2 z/OS, DB2 UDB, MS/SQL and Oracle." The dialog box has "OK", "Description...", "Cancel", and "Help" buttons at the bottom.

(new object) Properties

Attribute Name:

Category: Optional Varying Length

Domain: Case Sensitive Protected

Length: Decimal Places:

Technical Design Properties

TD Name:

Set TD name to the attribute name

Implement in C, C# and Java with decimal precision

COBOL Data type:

Messages:

BLOB attributes are valid only for DB2 z/OS, DB2 UDB, MS/SQL and Oracle.

OK Description... Cancel Help

Features in CA Gen 8.5

64-bit Support

- Unix/Linux Transaction Enabler upgraded to 64 bit
- CA Gen 8.5 supports Unix/Linux 64 bit generated server applications only
 - Available for Solaris, AIX and Linux
 - Support for 64 bit HP-UX Itanium already exists
 - Existing 32 bit servers need to be recompiled for 64 bit
 - Existing 32 bit EAB's need to be recompiled with correct 64 bit flags
 - 64 bit Tuxedo available for Linux
- Windows 64 bit was released with IE2
 - GUI clients remain 32 bits Windows
- Keeps up with 3rd party 64 bit only API support



Features in CA Gen 8.5

DB2 Table and Table Space Partitioning Plug-ins

- Table Partitions

- partition database tables based on the values of any column in the table OR whenever the size of the partition exceeds a certain value

- Tablespace Partitioning

- partition database tablespaces based on growth or by pre-defining a number of partition ranges

- Available with DB2 version 9

Data is stored in the model and used by the DDL generator when generating CREATE TABLE and CREATE TABLESPACE statements.

Features in CA Gen 8.5

DB2 Table and Table Space Partitioning Plug-ins

The screenshot displays the 'Technical Design Properties' dialog box. The background shows a list of 'Technical Design' entries for various DBMSs, with 'DB2 z/OS' selected. The dialog box contains the following settings:

- Targeted DBMS: DB2 z/OS
- Version: 9.X
- DBMS Access Method: Embedded SQL
- Reserved Word Checking For: Targeted DBMS
- Referential Integrity Enforced By: DBMS
- Permitted Value Default Enforcement:
 - on READs by Gen: Enabled
 - on CREATEs/UPDATEs by: Gen
- Enforce Default Values within DBMS
- Qualify tables and indices with owner ID (DML).
- Initialize Unspecified Optional Fields to Null
- Enable as-is naming

Buttons for OK, Cancel, and Help are located at the bottom right of the dialog.

Features in CA Gen 8.5

DB2 Table and Table Space Partitioning Plug-ins

The screenshot shows the CA Gen 8.5 software interface. The 'Tool' menu is open, and the 'Plug-in' option is selected. A sub-menu is displayed, listing several plug-ins, including 'CA Gen DB2 z/OS Table Partitioning Plug-in' and 'CA Gen DB2 z/OS Tablespace Partitioning Plug-in'. In the background, a 'Data Store List' table is visible, showing columns for 'Name' and 'Quantity'.

Name	Quantity
IEFDB	rec(30,6)st
TAAAAAA6	rec(3,1)
TableSp	
Table	
TableSp	
Table	
	rec(15,1)
	rec(2,1)

Features in CA Gen 8.5

DB2 Table Space Partitioning Plug-ins

CA Gen DB2 z/OS Tablespace Partitioning Plug-in

Tablespace T0000016

Partition by

Growth

MAXPARTITIONS: Member Cluster

NUMPARTS:

Range

NUMPARTS: Member Cluster

Partition Using	Free Block	GBP	Cache	Compress	Track Mod
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DSSIZE:

Features in CA Gen 8.5

DB2 Table Partitioning Plug-ins

CA Gen DB2 z/OS Table Partitioning Plug-in

Table SCORE_CARD

Partition Type

Range

Size

Partition Number

Append

0 Gigab

Add Columns Modify Columns Remove Columns

Add Range Change Range Delete Range

OK Clear All Cancel

Add Table Partitioning Columns

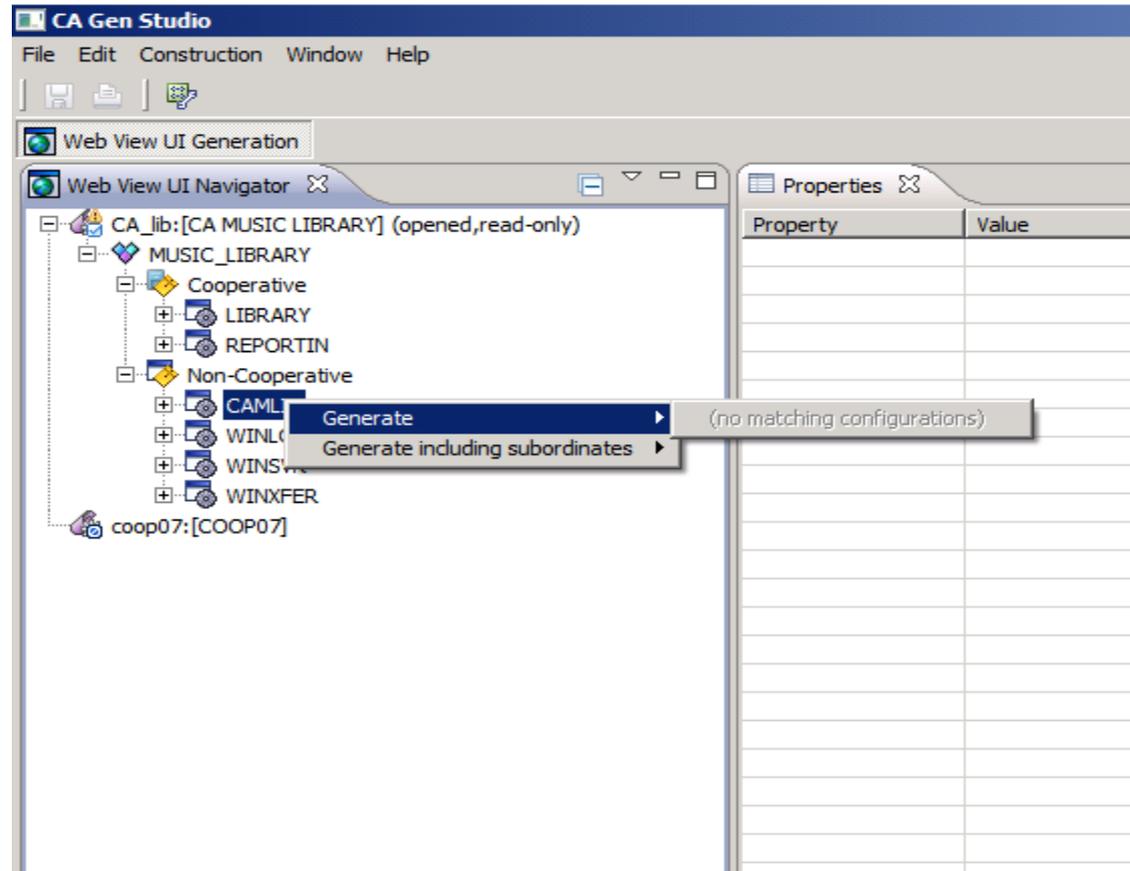
Column	Asc / Desc	NULLS
FK_SCORING_RECOFK_GOLFERUSERID	ASC	
FK_SCORING_RECODATE0	ASC	
FK_SCORING_RECOTIME0	ASC	

Add Modify Cancel

Features in CA Gen 8.5

Web View Generation

- Full generation for Web View applications from CA Gen Studio
 - DDL
 - Window Manager
 - Action Diagrams
- Maintain multiple generation configurations for each model
- Configurations may be added, modified, and deleted using the Generation Configuration dialog from within CA Gen Studio



Features in CA Gen 8.5

Transaction Enabler (TE) as a Web Service

- All CA Gen servers that execute under the CA Gen Transaction Enabler (TE) support the web service protocol. Prior to CA Gen Release 8.5, only CA Gen EJB Servers were capable of using the web service protocol.
- The support for web services extends to the following platforms running the TE: Windows, AIX, IA64, and Solaris.
- With the Web Services Middleware support added, all CA Gen Clients (C, Java, and .NET) can now communicate with TE using web service as the protocol.

CA Gen 8.5

Other Development Activities Post Release 8.5 1 of 2

- DB2 Features (August 2013)
 - DDL comment removal
 - VARCHAR for text > 4000
 - date/time/timestamp default values
 - NULL for mandatory non-identifying relationships
- Generate Proxies from UNIX CSE
 - Provide the ability to generate proxies on UNIX capability is available on Windows CSE
- Unlock Toolset if Upload to CSE Fails
 - Provide option to unlock the model in the toolset should errors



CA Gen 8.5

Other Development Activities Post Release 8.5 2 of 2

➤ Toolset Ease of Use

- Certify Java 7 and Visual Studio 2012
- Certify z/OS 2.1 and COBOL 5.1

Features in CA Gen 8.5 Post 8.5

Toolset Ease of Use Features

- Allow creation of a new action diagram from the action diagram selection list
- Default Import entity view optionality is set to mandatory
- Set default deletion rule when adding a relationship
- Fix highlighting after sort on the Navigation Diagram Open Window dialog
- Pass selected items on Windows to plug-in applications
- Partitioning indicated for Data Structure and Data Store List Diagrams
- Fix window sort when a dialect is displayed
- View matching dialogs displayed only when necessary

Features in CA Gen 8.5 Interim Enhancement 1

- In-Line Code
 - Write native code and/or SQL statements not natively supported by the CA Gen action language
 - Write free-form source code and/or SQL to reference CA Gen views
 - Pass data between hand-written code and the Action Diagram
- Web Services Consumption
 - Via the CA Gen Action Diagram, provide the ability to call any web service
 - Support all CA Gen language targets as well as all CA Gen environments (i.e. clients, servers, block-mode, batch, CICS, IMS)

Planned Releases



Plans beyond CA Gen 8.5 Interim Enhancement 1

...just to list a few....

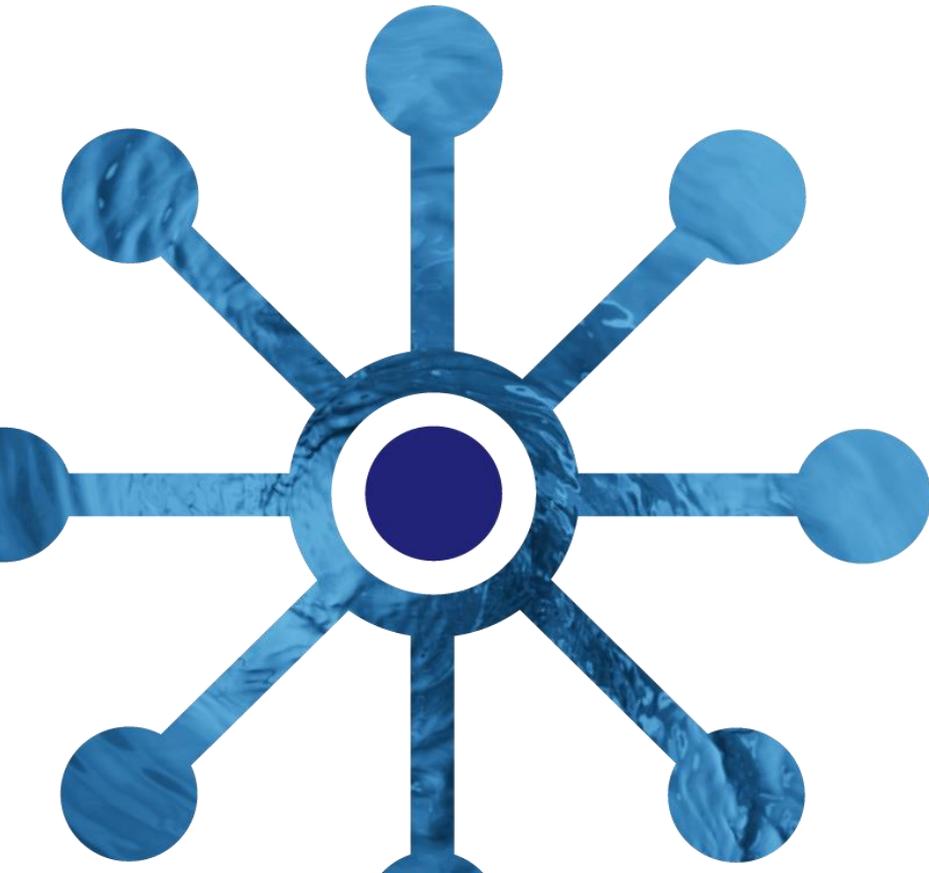
- BLOBs on z/OS (Late 2014)
- Mainframe Java Generation (need additional customers)
- Gen Studio Enhancements
 - Data Model List Diagram, Action Diagram, Window Designer
- Increase toolset support for larger models / subsets
- Add action diagram functions for BLOB (concat, substr, length, text-to-BLOB conversions)
- New targets: Eclipse plug-ins, HP NonStop MX
- CICS Web Services
- Diagram Trace Utility (DTU) on z/OS

CA Gen and Mobile Devices...

- IET's Rapide product allows current Gen models to be generated targeting tablets and smart phones
 - Android and iOS
 - Multiple platform design
 - Browser, Tablet, Phone
 - Same procedure step, multiple layouts
 - Native Controls and widgets
 - Sophisticated layouts
- CA will make minor modifications to the product to support Rapide in a more integrated fashion



Q&A



Demonstration



CA Gen

Demonstration of New Features

- Model Preferences
- Multi-Row Fetch
- Relational Operators IN and Between
- Identity Columns
- Table and Tablespace Partitioning Plugins
- BLOBs
- TE as a Web Service
 - http://localhost:2008/WEBAPSVR/MAINTAIN_GOLFER?wsdl
- Web Service Consumption Statement
- Custom Proxies
- Inline Code Statement

CA Gen

Demonstration of New Ease of Use Features

- Allow creation of a new action diagram from the action diagram selection list
- Default Import entity view optionality is set to mandatory
- Set default deletion rule when adding a relationship
- Fix highlighting after sort on the Navigation Diagram Open Window dialog
- Pass selected items on Windows to plug-in applications
- Partitioning indicated for Data Structure and Data Store List Diagrams
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