

InnerCircle  
Unlocking Engineering  
Knowledge

Impact Analysis



**InterConnect**2015

The Premier Cloud & Mobile Conference

**February 22 – 26**

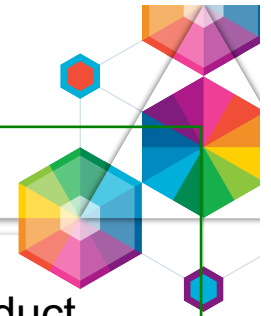
MGM Grand & Mandalay Bay | Las Vegas, Nevada

#ibminterconnect



© 2014 IBM Corporation

## Please note



IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM's sole discretion.

Information regarding potential future products is intended to outline our general product direction and it should not be relied on in making a purchasing decision.

The information mentioned regarding potential future products is not a commitment, promise, or legal obligation to deliver any material, code or functionality. Information about potential future products may not be incorporated into any contract. The development, release, and timing of any future features or functionality described for our products remains at our sole discretion.

Performance is based on measurements and projections using standard IBM benchmarks in a controlled environment. The actual throughput or performance that any user will experience will vary depending upon many factors, including considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve results similar to those stated here.

# RESTRICTION ON DISCLOSURE AND USE OF DATA

---



- This presentation includes data that shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed -- in whole or in part -- for any purpose. This restriction does not limit the Government's right to use information contained in this data if it is obtained from another source without restriction. The data subject to this restriction is contained on pages marked: "IBM Confidential"
- The data in the pages of this presentation where so annotated contain trade secrets and commercial or financial information voluntarily submitted by IBM that are either specifically exempted from disclosure by statute or privileged or confidential within the meaning of the exemptions set forth in Section 552(b)(3) and (4), respectively, of the Freedom of Information Act, 5 U.S.C. 552, the disclosure of which could invoke the criminal sanctions of 18 U.S.C. 1905.

# Acknowledgements and Disclaimers



**Availability.** References in this presentation to IBM products, programs, or services do not imply that they will be available in all countries in which IBM operates.

The workshops, sessions and materials have been prepared by IBM or the session speakers and reflect their own views. They are provided for informational purposes only, and are neither intended to, nor shall have the effect of being, legal or other guidance or advice to any participant. While efforts were made to verify the completeness and accuracy of the information contained in this presentation, it is provided AS-IS without warranty of any kind, express or implied. IBM shall not be responsible for any damages arising out of the use of, or otherwise related to, this presentation or any other materials. Nothing contained in this presentation is intended to, nor shall have the effect of, creating any warranties or representations from IBM or its suppliers or licensors, or altering the terms and conditions of the applicable license agreement governing the use of IBM software.

All customer examples described are presented as illustrations of how those customers have used IBM products and the results they may have achieved. Actual environmental costs and performance characteristics may vary by customer. Nothing contained in these materials is intended to, nor shall have the effect of, stating or implying that any activities undertaken by you will result in any specific sales, revenue growth or other results.

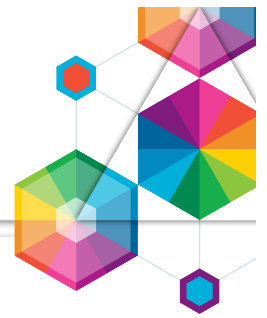
© **Copyright IBM Corporation 2015. All rights reserved.**

- ***U.S. Government Users Restricted Rights - Use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM Corp.***

IBM, the IBM logo, ibm.com, Interconnect, Rational and DOORS are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries, or both. If these and other IBM trademarked terms are marked on their first occurrence in this information with a trademark symbol (® or ™), these symbols indicate U.S. registered or common law trademarks owned by IBM at the time this information was published. Such trademarks may also be registered or common law trademarks in other countries. A current list of IBM trademarks is available on the Web at “Copyright and trademark information” at [www.ibm.com/legal/copytrade.shtml](http://www.ibm.com/legal/copytrade.shtml)

Other company, product, or service names may be trademarks or service marks of others.

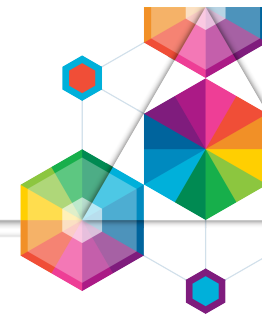
- REMINDER: Please follow the guidelines for copying third party materials. Third party screen shots, logos, presentations and website content are copyrighted materials owned by the third party, and as such we need permission from the third party to use them. Also, be sure the information you put on a chart is verifiable. Be sure to cite the source on your deck when using words, ideas, facts, photos, news clips or other expression that did not originate from yourself. This applies even if the content is publicly available and not confidential. If you have any questions, please contact your IP Attorney.



# Impact Analysis

---

- The IBM solution for Continuous Engineering delivers rich capabilities for impact analysis
- We are continuing to invest in capabilities for analyzing engineering relationships and impact from change across the design lifecycle
- And we are seeking ways to make use of these capabilities easier by
  - Removing tool boundaries
  - Enabling collaboration in the I/A process
  - Simplifying building and using tabular and diagram report views
  - Simplifying building and using visual views
- In this session we would like to broaden the discussion on Analysis and understand your needs
  - Introduce Impact Analysis and exemplify current tool capabilities (20 min)
  - Round-table breakout w/ discussions on your needs for I/A (40 min)
  - Breakout summary and conclusions (45 min)



# Capabilities for Impact Analysis

---



## Origins of impact

- Changing requirements
- Enhancements
- Defects
- Release plans



## Impact Analysis

- Impacted requirements and use-cases
- Impacted design and implementation
- Impacted streams and baselines

### Tool capabilities

- Artifact traceability
- Dependency diagrams
- Suspects analysis
- Tracking impact
- Find use and delivered change-sets
- Estimates and risks
- Plans and Tasks



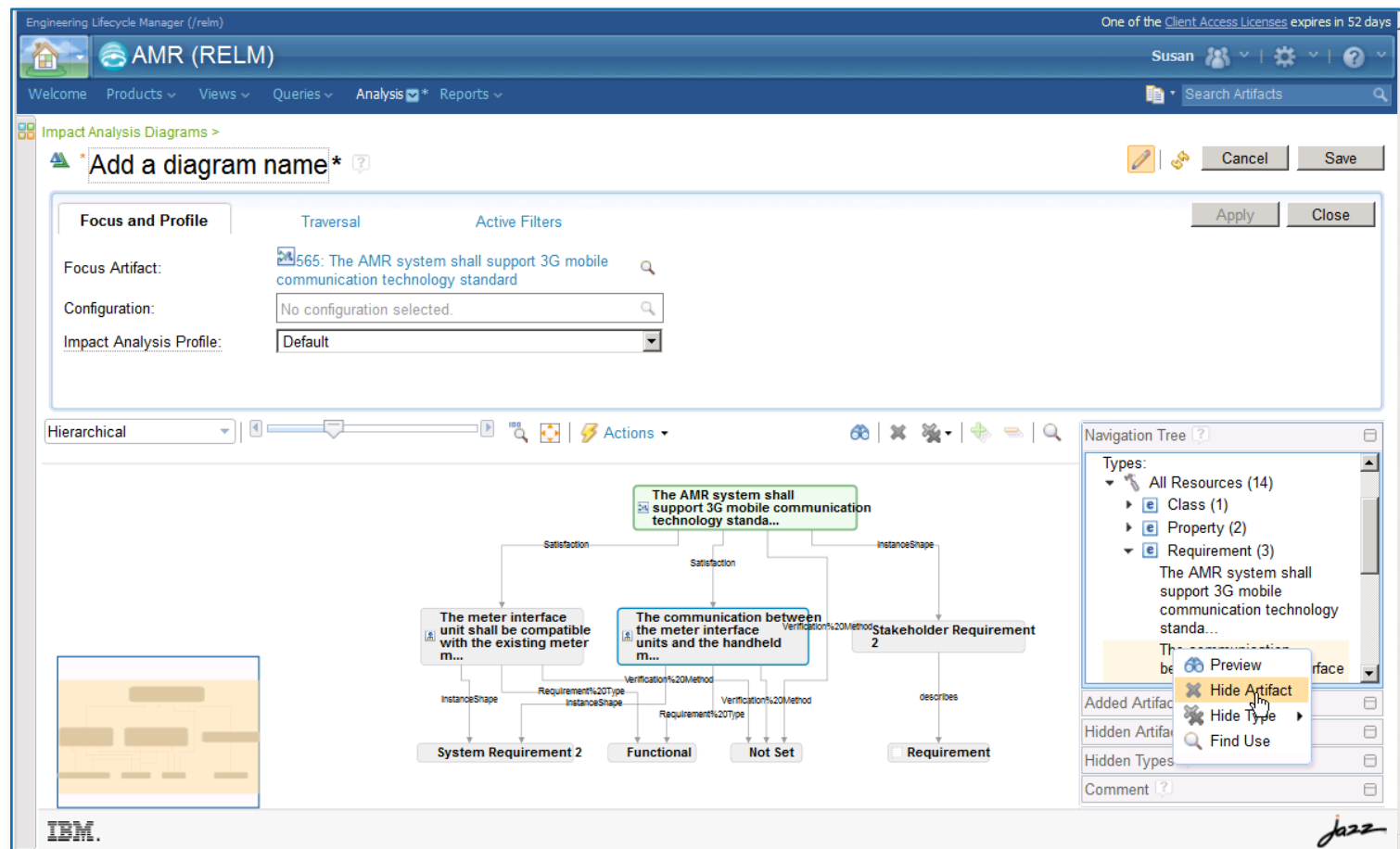
## Outcome of analysis

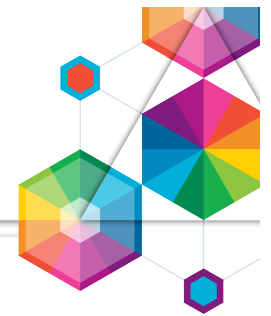
- Scope of change
- Reports on impacted artifacts
- Change approvals
- Collaboration
- Report on change history
- Audits and Compliance documents



# Visualizing Traceability – Impact Analysis views

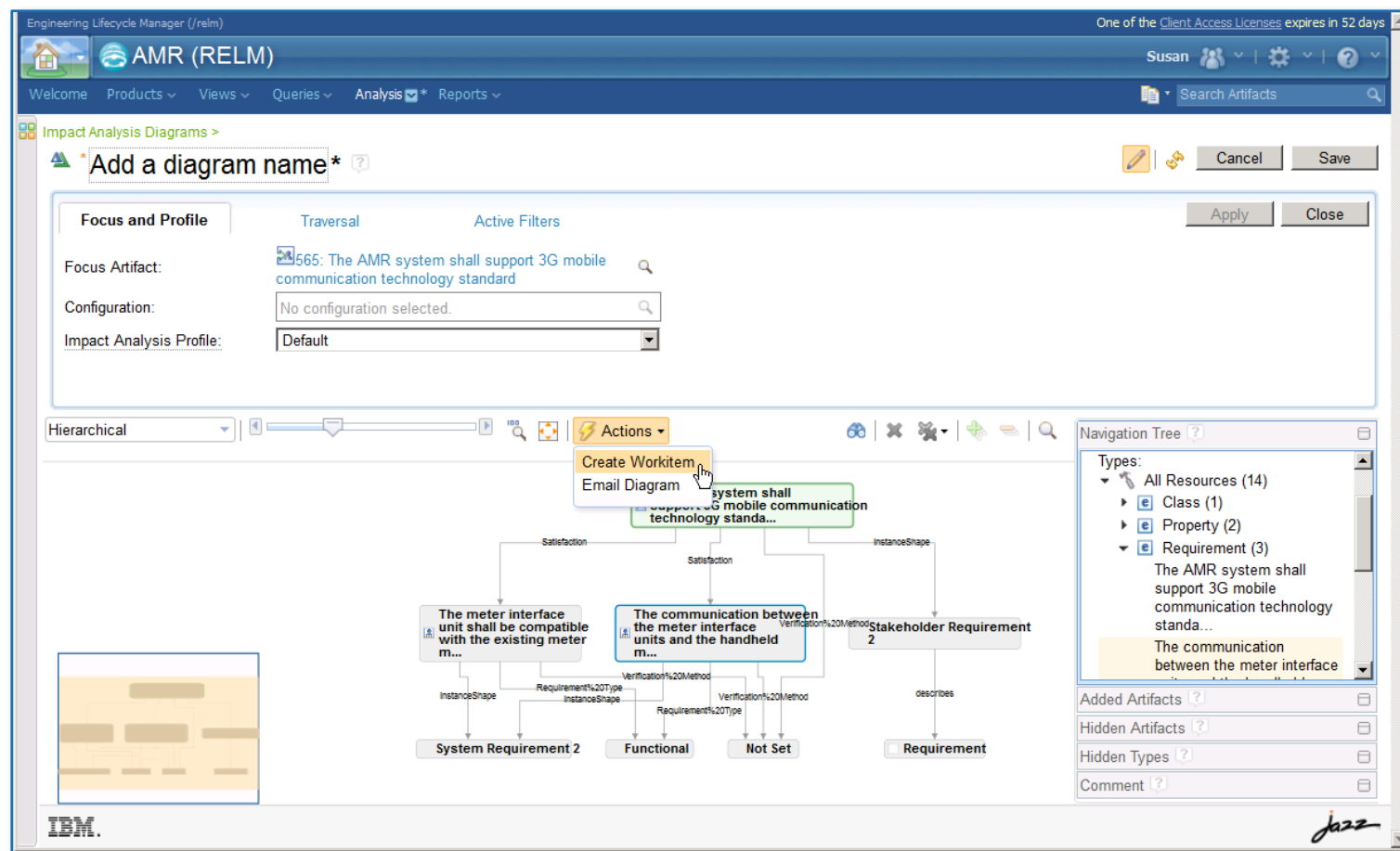
- Impact Analysis diagrams in RELM based on indexed data
- Define profiles for impact analysis
- Interactive usage. Set artifact focus – Filter artifact types - Hide artifacts



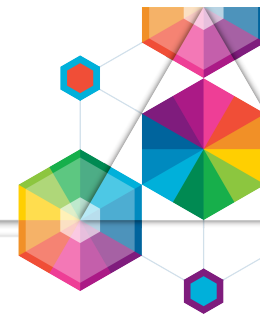


# Visualizing Traceability – Impact Analysis views

- Enabling collaboration and managing work for impact analysis
- Attach work items – Share diagrams – In context discussions







# Visualizing Traceability – Diagram views

- Use diagram views in RM and DM applications to view and browse traceability information





# Visualizing Traceability – Tabular views

- Use tabular view in RM and QM applications, or in JRS reports, to view and browse traceability information and suspects

The screenshot displays the IBM Rational Requirements Manager (RM) application. The main window shows a project named "AMR (RM)" with a breadcrumb path "AMR (RM) > 01 Requirements > 503: AMR System Requirements". The left sidebar contains navigation options: "Downstream Coverage", "Requirement Traceability", "Test Coverage" (which is highlighted), and "Upstream Coverage". Below these are filters for "Filter by Tag" and "Filter by Attribute". The main area shows a table of requirements and their associated test cases.

ID	Contents	Validated By
<input checked="" type="checkbox"/> 511	The handheld device shall interfaces with the city's backoffice software.	Test Case 24 - The handheld device shall interfaces with the city's backoffice software.
<input type="checkbox"/> 512	The handheld device shall allow for programming of a defined route, advancing to the next meter on the route as the meter reader moves through the route.	Test Case 55 - The handheld device shall allow for programming of a defined route, advancing to the next meter on the route as the meter reader moves through the route.
<input type="checkbox"/> 513	The handheld device shall have the ability to search for accounts by Last Name, Service Address, Meter Number, and Unread Meters.	Test Case 46 - The handheld device shall have the ability to search for accounts by Last Name, Service Address, Meter Number, and Unread Meters.
<input type="checkbox"/> 514	The handheld device shall have a screen capable of displaying the number of accounts that have been read and unread. Display information shall include: total number of accounts in collection route, number of read accounts, number of unread accounts, the address of each account. For completed (read) accounts, the display information shall include: the date and time of the last reading, summary of usage data, and the id of handheld reading device.	Test Case 2 - The handheld device shall have a screen capable of displaying the number of accounts that have been read and unread. Display information shall include: total number of accounts in collection route, number of read accounts, number of unread accounts,
<input type="checkbox"/> 515	The handheld device shall allow the meter reader to enter information about meters relocated on a particular route.	Test Case 38 - The handheld device shall allow the meter reader to enter information about meters relocated on a particular route.
<input type="checkbox"/> 516	Info captured via the handheld device shall be downloadable via either cable hookup or wireless signal.	Test Case 48 - Info captured via the handheld device shall be downloadable via either cable hookup or wireless signal.
<input type="checkbox"/> 517	The handheld device shall be able to recharge	Test Case 22 - The handheld device shall be able to recharge

At the bottom of the table, it says "Showing 55 of 71 Artifacts" and "1 selected (Clear All Selected)". The IBM logo is in the bottom left corner, and the Jazz logo is in the bottom right corner.



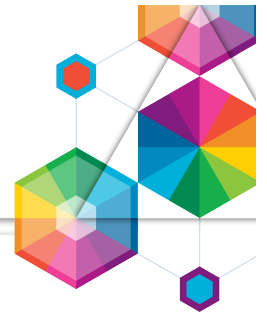
# Tracking Changes

- Identify root-cause of Defect and contained Change Set
- Identify delivery targets of Change Set across impacted streams and baselines

The screenshot displays the IBM Rational Rhapsody SysML interface. The main window shows the 'Entire Model View' with a hierarchical tree of components and packages. A 'History of Uc\_UploadUsageDataLocally' dialog box is open, showing a table of changes with columns for Comment, Creator, and Date Modified. A 'Configuration Management (V1v1)' window is also visible, showing a list of change sets under the 'Change Sets' tab.

Comment	Creator	Date Modified
Changeset for Rhapsody Model AMR_System 189	test	2014-03-27 0...
Changeset for Rhapsody Model AMR_System 190	test	2014-03-27 0...
Rename new attr	test	2014-03-27 0...

Actions	Name
	Automatically Generated Change Set (Dependency Modification) 72
	Automatically Generated Change Set (Dependency Modification) 74
	Changeset for Rhapsody Model AMR_System 189
	Changeset for Rhapsody Model AMR_System 190
	Rename new attr
	Change attr type



# Configuration dependencies

- Explore '*use of*' component configurations to analyze impact from found defects, or planned releases impacted by changing requirements

The screenshot displays the Global Configuration Management (GCM) interface. The left pane shows a tree view of configurations under 'AMR (GC)'. The 'AMR Server (SCM) 3.0 US.GA' configuration is selected, and a context menu is open with the 'Find Use' option highlighted. The right pane shows the 'Find Use' results, listing three products that use the selected configuration: 'AMR.S Manual 3.0 US.GA', 'AMR.S Mobile 3.0 US.GA', and 'AMR.S Grid 3.0 US.GA'. Two callout boxes provide additional context: one asks 'What products are using this component baseline?' and the other states 'The baseline is used in three products releases'.

Global Configuration Management (/gc)

AMR (GC)

Global Configurations

Welcome > Components > AMR > AMR.S Mobile US >

AMR.S Mobile 3.0 US.GA

- AMR.S Mobile 3.0 US.GA
  - AMR.S (DM) Mobile 3.0 US.GA
  - Meter Reader Mobile 3.0 US.GA
  - Meter Interface Mobile 3.0 US.GA
  - AMR Server 3.0 US.GA
    - AMR Server (DM) 3.0 US.GA
    - AMR Server (QM) 3.0 US.GA
    - AMR Server (SCM) 3.0 US.GA

Open in New Window

Open in New Window (no GC context for testing)

Find Use

AMR.S (RM) Mobile 3.0 US.GA

Global Configuration Management (/gc)

AMR (GC)

Global Configurations

Welcome > AMR Server (SCM) 3.0 US.GA >

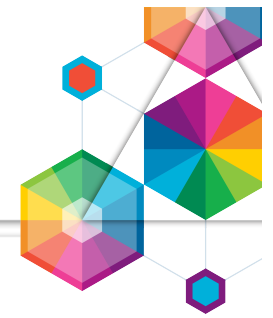
Find Use

"AMR Server (SCM) 3.0 US.GA" is used in the following locations:

- AMR.S Manual 3.0 US.GA
- AMR.S Mobile 3.0 US.GA
- AMR.S Grid 3.0 US.GA

What products are using this component baseline?

The baseline is used in three products releases



# Your needs for Analysis

---



## Origins of impact

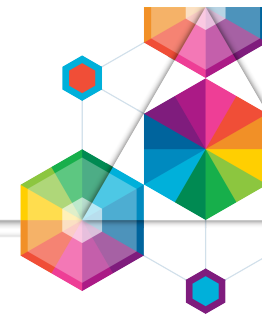
- For what reasons do your teams undertake analysis?
- What questions are you analyzing and what answers are you seeking?

## Analysis

- What job roles do what type of analysis?
- What are typical inputs?
- How much effort and time do a typically analysis take

## Outcome of analysis

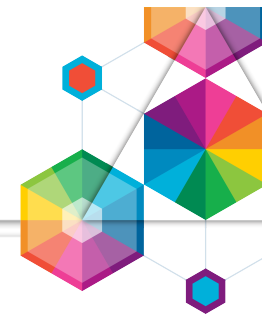
- What are typical outputs?
- What formality do you apply?
- How are the outputs used?



## Breakout – Roundtable discussions

---

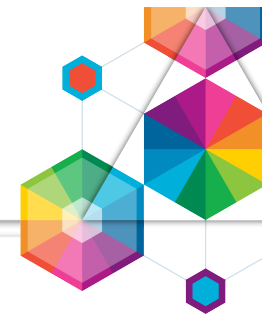
- Discuss your Impact Analysis needs in roundtables.
- Use current seating, or regroup if needed.
- IBM'ers will facilitate discussions and take notes
- Consider
  - Your origin of impact
  - Your Impact Analysis workflows
  - Your desired and reported outcome
- Also consider other (optional) questions on next slide
- Time: 40 minutes
- Prepare to summarize your discussions



# Questions - Your needs for Impact Analysis

---

- Which roles in your engineering teams do the most impact analysis?  
Can you summarize types of I/A by role?
- Is there a flow of tasks and decisions across teams?  
What analysis outcome is exchanged and how?
- In what ways are the Rational tools most effective today in helping your teams with impact analysis?
- What are your teams' biggest criticisms / gaps in the capabilities Rational provides for doing impact analysis?
- Do your teams use "suspect links"?  
What do they like / not like about the implementation in our tools?
- What's more useful: suspect links or an approach like the requirements reconciliation feature in RQM?
- Have any of you seen (or used) the interactive I/A tool in RELM?  
What are your thoughts about this approach?  
What's missing to make this the essential approach to team-based impact analysis in your programs?



# Questions - Your needs for Impact Analysis

---

Analysis of traceability assumes the following:

- The existence of an information model
  - An ALM implementation of the information model
  - Controls to ensure the artifact consistency in the ALM implementation
  - Information model views generated from the ALM implementation that supports Impact Analysis
- 
- Do you have / intend to have an information model and ALM implementation that supports your Impact Analysis needs?



# Thank You

Your Feedback is  
Important!

Access the InterConnect 2015  
Conference CONNECT Attendee Portal  
to complete your session surveys from  
your smartphone, laptop or conference  
kiosk.



## InterConnect2015

The Premier Cloud & Mobile Conference

#ibminterconnect

