



Welcome to the Virtual IMS user group newsletter. The Virtual IMS user group at [www.fundi.com/virtualims](http://www.fundi.com/virtualims) is an independently-operated vendor-neutral site run by and for the IMS user community.

## Virtual IMS user group presentation

The latest webinar from the Virtual IMS user group was entitled, "IMS and APIs (the Good, the Bad, and the UGLY!)". It was presented by Dusty Rivers, Director, z Systems Software: IMS & CICS at GT Software.

Dusty Rivers has an extensive 39-year background in global mainframe systems integration, and has been recognized as an IBM Champion for Information Management for nine years in a row for his leadership and contributions to the Information Management community. His expertise focuses on enabling global organizations to extend the use of their mainframe systems into the world of Web services, clouds, and



Figure 1: IMS APIs

all distributed systems. An engaging speaker, Dusty travels the United States presenting on various topics in leveraging IMS for modern technologies.

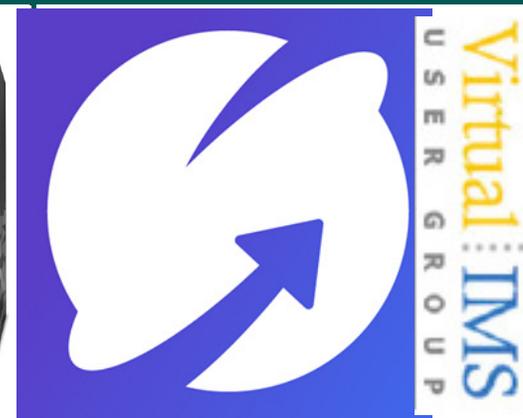
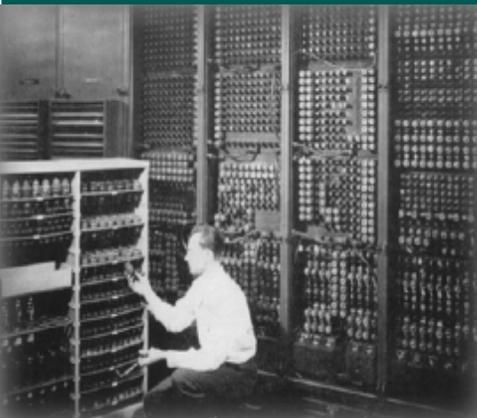
Dusty started by looking at what was meant by an Application Programming Interface (API). Wikipedia tells us that an API is a set of subroutine definitions, protocols, and tools for building application software.

In general terms, it is a set of clearly defined methods of communication between various software

components. A good API makes it easier to develop a computer program by providing all the building blocks, which are then put together by the programmer.

### Contents:

Virtual IMS user group presentation	1
Meeting dates	5
Recent IMS articles	6
Arcati Mainframe Yearbook 2018	6
About the Virtual IMS user group	6



# APIs



REST/JSON, SOAP, JDBC, ODBC

**Figure 2: Connecting to your mainframe**

An API may be for a Web-based system, operating system, database system, computer hardware, or software library.

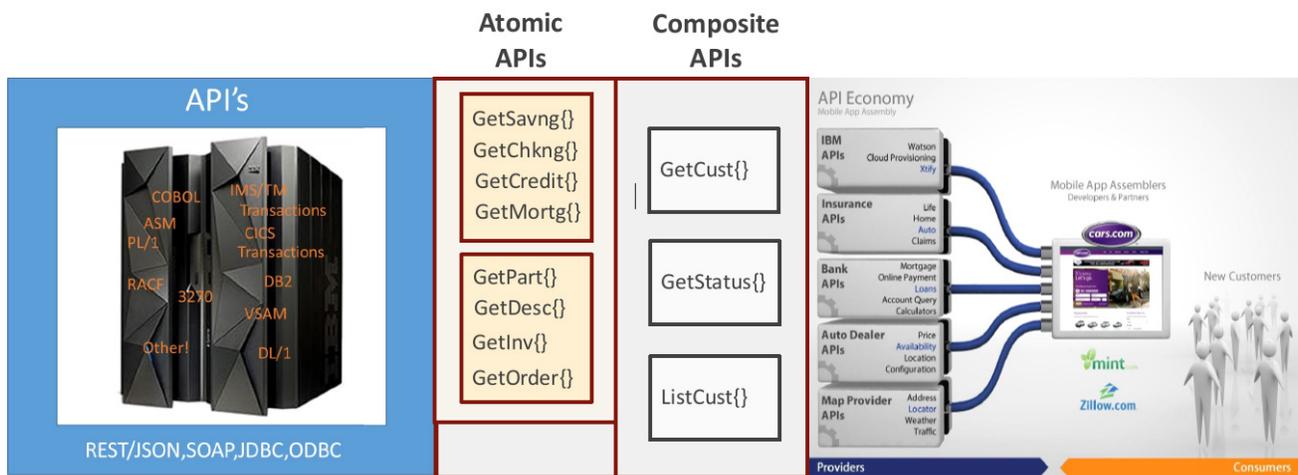
An API specification can take many forms, but often includes specifications for routines, data structures,

object classes, variables, or remote calls. POSIX, Microsoft Windows API, the C++ Standard Template Library, and Java APIs are examples of different forms of APIs.

Documentation for the API is usually provided to facilitate

usage. And they all look different (see Figure 1)!

Many people don't even think that IMS can be part of the bigger computing infrastructure and view it as a separate island of computing with its own special way of working, eg Db2, CICS, IMS, etc. Figure 2 shows that all



**Figure 3: API types**

those things we associate with the mainframe can have APIs and can share data using the techniques familiar to people working with mobile devices.

Figure 3 illustrates the granularity of APIs. Atomic APIs simple move one single piece of information, eg a

customer’s credit rating. Whereas composite APIs can move large amounts of information, eg all of a customer’s details. And this can be passed along the application.

Dusty then went on to look at actual APIs, which he categorized as:

- COBOL and PL/1
- IMS transactions
- IMS transactions combined
- IMS conversational
- IMS multi-segment output.

THE GOOD	THE BAD	THE UGLY
All Data Structures Supported	Some structures don’t map well to distributed Apps	Comp-3, Binary , ODO REDEFINES
All can be exposed as service inputs/outputs	Names in COBOL-PL/1 may be cryptic and need to be renamed	c3-7-proj1-open-partnum12 = partNUM
Can expose existing programs without changes	May need more data to drive than the app knows	Message switches, and other calls

**Figure 4: The good, the bad, and the ugly for COBOL and PL/1**

THE GOOD	THE BAD	THE UGLY
Existing Transactions can be exposed as REST or SOAP	A Transaction may be too fine grained	Multiple Transactions may have to be used in service
Data from transaction returned as a service output	Data may be too convoluted to use in service	Volume of data may be too large to return to distributed client
PFKEY = TRANCODE	Maybe need multiple Trans	

**Figure 5: The good, the bad, and the ugly for IMS transactions**

THE GOOD	THE BAD	THE UGLY
Combine Transactions in one service	May not work well with others	API's that run for minutes
Use Conversational Transactions	Long running conversations may be long running API's	No understanding of conversational impact
No Code re-write	May be easier to combine logic to keep from calling multiples transactions	

**Figure 6: The good, the bad, and the ugly for IMS transactions combined**

THE GOOD	THE BAD	THE UGLY
Wrap a conversation in a service	Wrap a conversation in a service	Wrap a conversation in a service
Use Conversational Transactions	Long running conversations may be long running API's	Conversational rollback

Figure 7: The good, the bad, and the ugly for IMS conversational

THE GOOD	THE BAD	THE UGLY
Multiple Segment output can be returned to client	May be variable Length in one response	May be variable length multi-segment response

Figure 8: The good, the bad, and the ugly for IMS multi-segment output

The good, the bad, and the ugly for COBOL and PL/1 is shown in Figure 4.

The good, the bad, and the ugly for IMS transactions is shown in Figure 5.

The good, the bad, and the ugly for IMS transactions combined is shown in Figure 6.

The good, the bad, and the ugly for IMS conversational is shown in Figure 7.

The good, the bad, and the ugly for IMS multi-segment output is shown in Figure 8.

Dusty illustrated a lot of examples using GT Ivory Orchestration, as well as Ivory generated SOAP and REST APIs.

A copy of Dusty River's presentation is available for download from the Virtual IMS user group Web site at [www.fundi.com/virtualims/presentations/IMSAPIFeb18.pdf](http://www.fundi.com/virtualims/presentations/IMSAPIFeb18.pdf).

You can see and hear the whole user group meeting by downloading the WMV file from [www.fundi.com/virtualims/presentations/2018-02-06meeting.wmv](http://www.fundi.com/virtualims/presentations/2018-02-06meeting.wmv).

### Meeting dates

- On 10 April 2018, Compuware's Thomas Esser will be discussing, "Adding additional IMS Test Environment's with COPE".

- The following meeting will be on 12 June 2018, when IBM will be looking at IMS and Digital Transformation.

### Recent IMS articles

*IMS 14 tries on the IBM z14 for size – with great results!* by Jasdeep on z Systems Developer Community (21 February 2018). You can find the article at <https://developer.ibm.com/zsystems/2018/02/21/ims-14-tries-ibm-z14-size-great-results/>

*DevOps and IMS: Getting Started* by Saar Sagir on z Systems Developer Community (20 February 2018). You can find the article at <https://developer.ibm.com/zsystems/2018/02/20/devops-ims-getting-started/>

*Continuous Delivery, IMS Style: IMS Function Level* by Sandy Stoob on z Systems Developer Community (17 January 2018). You can find the article at <https://developer.ibm.com/zsystems/2018/01/17/continuous-delivery-ims-style-ims-function-level/>

*IMS documentation is now available in a locally hosted IBM Knowledge Center for easy access* by Emily Siu on z Systems Developer Community (11 January 2018). You can find the article at <https://developer.ibm.com/zsystems/2018/01/11/ims-documentation-is-now-available-in-a-locally-hosted-ibm-knowledge-center-for-easy-access/>

### Arcati Mainframe Yearbook 2018

Many members of the Virtual IMS user group contributed to this year's user survey in the Arcati Mainframe Yearbook.

If you want to get your hand on this one-stop shop for mainframers, the Yearbook is free to download from the Arcati Web site here: <https://www.arcati.com/newyearbook18>.

### About the Virtual IMS user group

The Virtual IMS user group was established as a way for individuals using IBM's IMS hierarchical database and transaction processing systems to exchange information, learn new techniques, and advance their skills with the product

The Web site at [www.fundi.com/virtualims](http://www.fundi.com/virtualims) provides a central point for coordinating periodic meetings (which contain technically-oriented topics presented in a webinar format), and provides articles, discussions, links, and other resources of interest to IBM IMS practitioners. Anyone with an interest in IMS is welcome to join the Virtual IMS user group and share in the knowledge exchange.

To share ideas, and for further information, contact [trevor@itech-ed.com](mailto:trevor@itech-ed.com).

The Virtual IMS user group is free to its members.