

Session Abstracts

Thursday, July 15

ListAgg and Split – Accumulating and Decomposing Data with SQL – Birgitta Hauser

ListAgg is an aggregate function that allows you to build a string with data located in multiple rows, for example accumulating all Item No of an order in a string. But what if we have already a string containing a list of information and want to decompose it? That's what the User Defined Table Function SPLIT is for! In this session you will learn what you can do with this functions, among other also decomposing comma separated files.

Python Modules for Profitability – Mike Pavlak

Developing applications has far less to do with YOUR code and a lot more to do with OPC or Other Peoples Code. Leveraging Python scripts and code from the community can improve productivity and help shrink development windows. In this session we'll look at where a lot of the code comes from in the form of Python modules.

Learning Objectives:

- 1) Understand how Python modules are implemented and used.
- 2) Explore the Python Standard Library or PSL.
- 3) Install and explore several open source modules that add productivity to the development team.

What's New in Db2 for i – Scott Forstie.

In the tradition of previous Technology Refreshes (TR), the database team is delivering enhancements on the same cadence. Attend this session to hear about the many enhancements to SQL on i, SQL Query Engine, IBM i Services and more. This session will cover the new and enhanced Db2 for i capabilities added to IBM i 7.3 and IBM i 7.4 over the most recent IBM i Technology Refreshes. This session will include something for everyone and anyone who uses the IBM i.

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Integrate IBM i with Anything with Apache Camel – Jesse Gorzinski

In this session, we will explore Apache Camel, an open source integration framework. Camel can be used to integrate various pieces of a heterogeneous technology stack in a common fashion through the use of enterprise integration patterns, or EIPs. Simply put, it lets you connect anything with anything! Or just about.... IBM i users have been using it to integrate with REST APIs, Slack, Twitter, Kafka, and much more. After this session, you might be using it, too!

Friday, July 16

RPG Tricks and Techniques – Paul Tuohy

In this session Paul discusses some of his favourite RPG (and embedded SQL tips and techniques. From the CTL-OPT to *INLR - and everything in between!

Security Testing - Yvonne Enselman

Securing all systems in an organization has never been more important. This session will focus on the quality assurance discipline of Security Testing and the components that need to be accounted for to ensure your system is protected. We will discuss how to analyze and organize testing for Piracy,

Malicious code, denial of service, reading of data, breaking encryption, logic bombs (virus and worms), and cross site scripting.

Some of My Favorite RDi Tips in 30 Minutes - Charlie Guarino

Join me to see some cool features of editing and debugging RPG programs.

Open Source Performance Tools for PHP, Python and Node.js – Alan Seiden

Users love fast applications. Find and eliminate any slow code in your Node, PHP, and Python applications using free, open source performance profiling tools that you can download and use immediately.

Security Options for API and Web Service Enablement – Aaron Magid

As IBM i customers open up their IBM i systems to outside connections, they are understandably concerned about the security implications for their core applications and data. There are a variety of techniques available to secure your IBM i that allow you to safely enter this new interconnected world. In this session, we will cover the basics of API and web service security and the pros and cons of different approaches.

IBM i Service Commander-Manage Your Open Source and System Services – Richard Schoen

IBM i Service Commander is an open source utility created by Jesse Gorzinski for unifying the daunting task of managing various open source and other PASE, QShell or other IBM i system services and applications. This tool can be used to manage a number of services, for instance: IBM i host server jobs, IBM i standard TCP servers (*TCP, *SSHD, etc.), Open-Source programs you wrote (Node.js, Python, PHP applications), Apache Tomcat instances, Kafka, Zookeeper, ActiveMQ servers, Jenkins, etc. Attend this session to see how to quickly establish consistency and better manage your background services and jobs.

The Success Story of Java & Open-Source Software on the IBM i – Frederic Marceau

Java is a very good option on the IBM i and the Java ecosystem has greatly benefited from the contribution of the Open-Source community in the last 25 years or so. This presentation will include several examples such as build automation, test automation, application framework, etc. These categories of Open-Source initiatives will be described including some detail on the pros and cons of each Open-Source project.

Session Abstracts - On-Demand Sessions (by Speaker)

Web Services: A RESTful introduction – Patrick Behr

We'll cover the basics of web services in this quick introduction. We will discuss HTTP requests and responses and include some examples. We'll take a high-level look at the RESTful web services architecture and briefly describe the JSON format. Then we'll finish up with a short list of some options we have on IBM i for providing and consuming web services.

What the Heck is Binder Source and Why Do I Care? – Patrick Behr

Learn what binder source is and what it does, and why you definitely want to use it with your service programs.

Why Procedures Are Better Than Subroutines – Patrick Behr

Let's talk about the benefits of procedures and learn how to create and use them.

Building and Leveraging File System Containers – Erwin Earley

With the usage of Open Source growing on IBM i the ability to implement dedicated development environments and deploy open source solutions in isolated environments becomes ever more important. Join open source evangelist Erwin Earley as he takes you on a journey to explore the benefits of file system containers that can be built in the IFS and the benefits those containers can provide to the development and application space.

Basics of Testing for IBM i Professionals - Yvonne Enselman

Designed for programmers this session will help application developers deliver more reliable work product. While the need for testing and QA is widely accepted and embraced it can be difficult to achieve in smaller IT departments where one professional wears many hats. Whether you are your own QA or you want to bullet proof your applications before hand off this a session will improve your skills.

Tame the IFS using SQL – Scott Forstie

On IBM i and within Db2 for i, SQL is more than the language of the database. In this pre-recorded session, Scott will enter the center ring and show how SQL can be used to tame the mighty Lion known as the IFS.

SQL Performance Analysis Tools in IBM i Access Client Solutions (ACS) – Birgitta Hauser

SQL becomes more and more the standard for accessing data in physical files or SQL tables. Contrary to native I/O where the programmer specifies a physical or logical file that is to be used, in SQL it is the Optimizer who decides whether an index is used or whether the complete table/file is read.

Long running queries are a nuisance. ACS (Access Client Solutions) provide multiple interfaces for recording information about SQL queries and for analyzing the collected data, such as Visual Explain, SQL Plan Cache (Snapshots) or SQL Performance Monitors. All advised indices from both query engines (SQE and CQE) are recorded along with information about how often and when an index was used for the last time. With Access Client Solution this information can be accessed and necessary indexes immediately created.

Setting Up Your Development Environment – Mark Irish

Installing and configuring open-source software on your system is only half the battle. You also need to establish a good development workflow. This talk will focus on how to set up your development environment in a modern way: Using ssh to log onto a bash session on IBM i, mounting the file system on your workstation to interact with the IFS, and using modern editors and IDEs. I will highlight some best practices, as well as some common pitfalls to avoid. Soon, developing software on IBM i will feel nearly identical to development on any other system!

JavaScript for IBM i RPG Developers – Aaron Magid

With JavaScript, IBM i developers can create the latest in mobile and web user interfaces for their RPG applications. JavaScript is also the preferred technology for building and deploying secure web services. Now that IBM is providing comprehensive JavaScript support on the IBM i, it is easy for IBM i developers to take advantage of all the capabilities JavaScript offers for extending IBM i applications. In this session, we will cover the basics of JavaScript to help you get started in adding new user experiences and web services using JavaScript for your RPG applications.

Understanding the New Power9 – Pete Massiello

In July 2020, IBM announced enhancements to the IBM Power Systems Scale-out (SO) product line of the S914, S922 and S924 POWER9 servers. This session will go over the features, functions and what you should know about the “G” models.

Advanced Python on IBM i – Mike Pavlak

So, you've been learning about Python and maybe even playing a bit. This session will address the object-oriented world of Python programming and introduce several topics for those considering Python for development. Some of these include Exception processing, Pathing, GUI use ODBC, Web Services and much more.

Learning Objectives:

- 1) Understand the Object Oriented model of Python
- 2) Master the use of ODBC from client AND server Db2 connections
- 3) Many other topics that help continue the growth of a Python developer

Intro to Node.js – Mike Pavlak

What is Node.js? Why use it? How to install it and more.

The Real Effects of Malware – Steve Pitcher

Have you been breached by malware? Good question. A better question would be: have you been breached by malware yet? In the last 12-months, we have been inundated with requests to help customers recover from malware breaches and close the doors to prevent it happening again. Be sure you're proactive. Harden your defenses before it happens to you.

Using Digital Certificates – Steve Pitcher

Let's talk about encryption! Encryption isn't as scary as some people seem to think. Steve will walk you through the basics of encryption, from protocols to ciphers and everything in between. When you set up encryption, we want you to set up GOOD encryption!

Using the New DCM – Steve Pitcher

Do you dread having to renew your encryption certificates every few years because IBM Digital Certificate Manager is...a little obtuse? Good news! It's had a full refacing into a modern interface that does not need a manual! Join me and I'll take you through the new and improved DCM interface!

RPG Makes Friends with Open-Source Apps – Richard Schoen

I come from the world of the traditional RPG developer. And I arrive bearing open-source peace offerings for my fellow IBM i travelers. When I started my IBM i development journey back in the eighties I was constantly developing custom RPG programs and CL command utilities to help get work done easier. After 30+ years the journey continues to discover the perfect integration for IBM i. Even though there is no perfect integration technology, in this session you'll learn about useful ways to integrate between traditional languages such as RPG and CL and the open-source stack available on IBM i, allowing you to do many of the things you thought were impossible with RPG. Our RPG and CL integration examples will primarily focus on Python. However, this integration approach is relevant for any of the open-source languages or applications, including Python, Bash Scripts, QShell/PASE commands, Java, PHP, Node.JS and others. By adopting the techniques learned in this session your RPG and CL toolbox has just been tripled in size. You won't want to miss this inspiring open-source technical session.

ODBC Your Open Source – Alan Seiden

ODBC is quickly becoming the strategic way for web applications to access Db2 data and RPG program logic on IBM i. With the new, native ODBC driver on IBM i, developers are excited to code locally on their PCs, then deploy the same code to IBM i for production. Learn best practices for using ODBC with open source languages, including Node.js, PHP, and Python, and how to convert from language-specific middleware functions to ODBC.

Learning objectives:

1. How to install and configure ODBC on IBM i
2. How ODBC can help you develop software that can run on any platform while accessing IBM i data
3. How to use ODBC from the various languages safely and effectively, avoiding common mistakes

PHP in 2021 - What's New and Exciting on IBM i – Alan Seiden

Topics to be included:

1. What people should know about PHP 8
2. New RPM-based PHP installation options
3. What innovative IBM i companies are doing with PHP
4. New database connectivity options
5. Enhancements to the PHP toolkit (RPG/CL calls)
6. PHP performance profiling to speed up your applications.

Web Server Magic on IBM i – Alan Seiden

Anyone creating web or mobile applications, or APIs, can benefit from the techniques shown here:

- Do I need a web server? Which one is best for me?
- Securing your site
- Apache and Nginx tips and tricks
- HTTPS encryption (SSL/TLS), including using the free Let's Encrypt
- Create user-friendly and search-engine friendly URLs over any web application
- What if you become popular? (performance and handling a large number requests)

Learning Objectives:

- Understand how to secure the Apache web server on IBM i
- Learn to use Apache's most useful features, including search engine optimization, logging, and virtual hosts

Audience:

Administrators and developers seeking to prepare their systems for web applications, improve performance, and improve security.