How Does an Open IBM i Platform Enable Success for My Business

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FrescheThinker







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Agenda



- OSS
- IBMiOSS





OSS



—a "program" or "application"—works. Programmers who have access to a

or fixing parts that don't always work correctly.

computer program's source code can improve that program by adding features to it



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Open Source Software



Software with source code that anyone can inspect, modify, enhance



Open Source Software



- Software with source code that anyone can inspect, modify, enhance
- The opinions expressed on this website are those of each author, not of the author's employer or of Red Hat





From The Board

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Open Source Initiative

ABOUT ✓

LICENSES & STANDARDS >

MEMBERSHIP ▼

COMMUNITY ▼

RESOURCES ▼

NEWS & EVENTS ➤

Users



Open source software is software developed by and for the user community. Discover the wide variety of open source applications, from productivity applications to calendaring or email software, and learn more about the benefits of personal use. We'll also help you find peers and communities to support your interests.

Developers



Open source projects provide tremendous opportunities for developers to share and learn through collaboration. Find colleagues for your project or join an existing effort. Contributions aren't limited to code, successful open source projects need a diverse range of skills.

Business



Driving innovation requires optimizing how a company creates, deploys & uses software assets. Find out how enterprises have realized the promise of open source: higher quality, greater reliability, more flexibility, lower cost, and an end to predatory vendor lock-in.

Non-Profit



Whether serving as a foundation in support of an open source software project or harnessing open source infrastructure for day-today operations in support of any mission, learn how the open source ethos of contribution & community helps make life for NPO & NGO staffers easier.

Education



Many of the world's most successful open source projects have their roots in the academy. Participation extends beyond adoption and development, and now includes a wide variety of academic programs and research. Discover how your institution can benefit from open

Government



Governments around the globe recognize the value of open source as both a technology solution delivering value to the public they serve as well as an approach for development returning tax-payer investments back to the society they represent.









- To promote and protect open source...
- A global non-profit
- The Open Source Initiative (OSI) protects and promotes open source software, development and communities
- Championing software freedom in society through education, collaboration, and infrastructure
- Stewarding the Open Source Definition (OSD)
- Preventing abuse of the ideals and ethos inherent to the open source movement





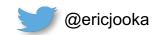
- Software that can be freely used, changed, shared (in modified or unmodified form) by anyone
- Open source software is made by many people distributed under licenses that comply with the Open Source Definition



Open Source Software

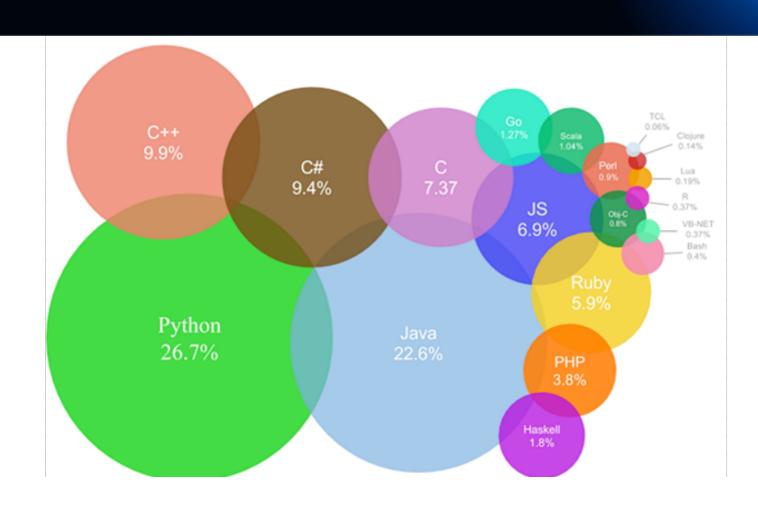






codeeval: Most Popular Coding Languages of 2016





IBMiOSS Open Source Software on IBM i



IBMiOSS



- Started with code sharing and tips and tricks
 - Jon Paris and Susan Gantner
 - Scott Klement
 - Aaron Bartell
- Ruby ported to IBM i PASE
 - Pete Helgren



IBM and IBMiOSS



- 1998: Perl
- 1998: First open-source IBM i project was JTOpen
- 2001: Linux partitions hosted in PASE
 - SuSE, Turbolinux
- 2002: Apache HTTP server shipped
- No dates specified
 - OpenSSL
 - OpenSSH
 - Apache Tomcat
 - Samba



IBM and IBMiOSS on i5/OS V5R3



• 2006: Zend Core

• 2006: Zend Studio for i

•2011: Zend Server for i

• 2011: Zend DBi



IBM and IBMiOSS on i5/OS V5R3



• 2006: Zend Core

2006: Zend Studio for i

• 2011: Zend Server for

• 2011: Zend DBi





IBM and IBMiOSS



Vendors port and support















Wiki





















IBM and IBMiOSS



- 2010: POWER7 servers with POWERLinux Operating Systems
- RedHat
- SUSE
- Ubuntu
- Big Endian
- Little Endian



IBM and IBMiOSS – CentOS spotted in the wild

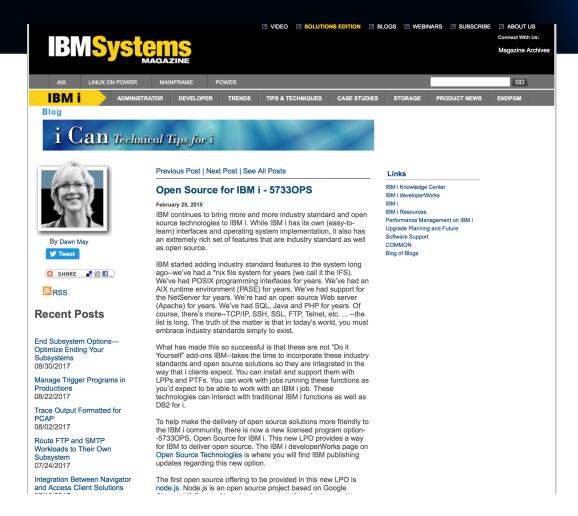


- A community-driven free software effort
- Delivering a robust open source ecosystem





iCan – Dawn May February 2015





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Today's IBMiOSS from IBM



IBM and IBMiOSS



- Zend PHP
- PowerRuby
- •5733-OPS



Zend PHP



- Zend Server for i
 - Application server for PHP code
- · Zend Studio for i
 - Eclipse-based development environment
- Zend DBi
 - MySQL implementation for IBM i
 - DB2 Storage Engine enables data storage in DB2



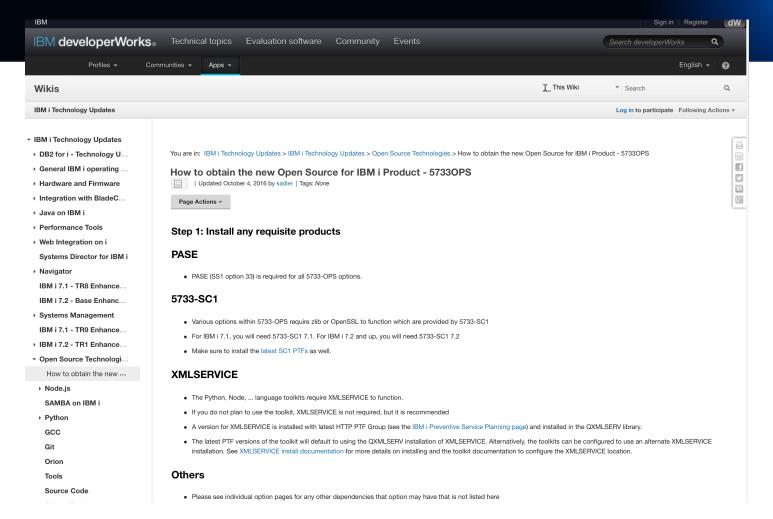
PowerRuby.com



- Freely available and commercially supported port of the Ruby language
- Includes Rails
- Includes native DB2 database driver MySQL not necessary
- Integrates with XMLSERVICE for access to IBM i programs and objects



5733-OPS





5733-OPS



Node.js v1
Python 3
CHROOT
Python 2
Node.js v4
Git
Tools
Orion
cloud-init
Node.js v6
Nginx
TBD
TBD
TBD
TBD



Node.js



- Server-side JavaScript
- Web development!
- JavaScript already widely used on the client side
- High Performance designed to maximize throughput and efficiency
- More than 70,000 third-party extensions are available



Python



- A powerful general-purpose language
- Interpreted
- Easy for IBM i programmers to learn
- Number one introductory language in colleges in North America
- More than 85,000 third-party extensions are available



GCC and CHROOT



- Gnu Compiler Collection
 - Scripts to set up gcc and other popular build tools
- A real build environment
- Inside a "chroot"
 - Can useisolated, sandboxed versions of the build environment



git



- Open Source distributed version control system
- Source control for any language
- Powerful and flexible
- Hooks to perform custom actions when new code is integrated



nginx (engine X)



- HTTP and reverse proxy server
- Mail proxy server
- Generic TCP/UDP proxy server



Tools



- bash
- zip
- unzip

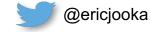
Shellinabox (under consideration)



shellinabox - SSH terminal in a browser



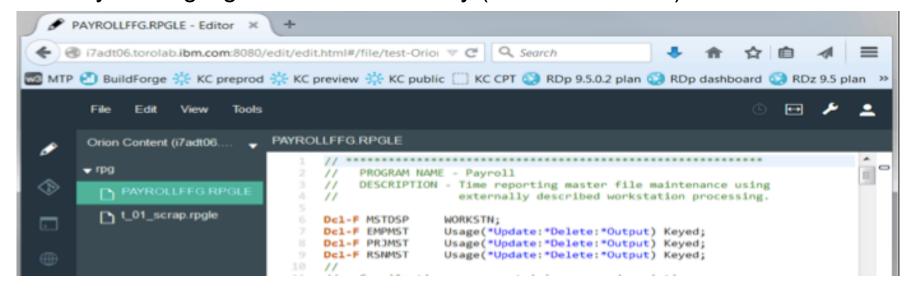
```
Shell In A Box
         & https://9.5.54.241:4200
i5bch1b8p1 login: jgorzins
jgorzins@i5bch1b8p1's password:
$ pip3 install xlsxwriter
Collecting xlsxwriter
  Downloading XlsxWriter-0.9.3-py2.py3-none-any.whl (136kB)
    100% |#################### 143kB 186kB/s
Installing collected packages: xlsxwriter
Successfully installed xlsxwriter-0.9.3
$ npm install ishint
npm WARN deprecated minimatch@2.0.10: Please update to minimatch 3.0.2 o
r higher to avoid a RegExp DoS issue
npm WARN deprecated minimatch@0.3.0: Please update to minimatch 3.0.2 or
higher to avoid a RegExp DoS issue
jshint@2.9.2 node modules/jshint
strip-json-comments@1.0.4
  — exit@0.1.2
 console-browserify@1.1.0 (date-now@0.1.4)
  — shelljs@0.3.0
 minimatch@2.0.10 (brace-expansion@1.1.6)
 — cli@0.6.6 (glob@3.2.11)
htmlparser2@3.8.3 (domelementtype@1.3.0, entities@1.0.0, domhandler@
2.3.0, readable-stream@1.1.14, domutils@1.5.1)
L— lodash@3.7.0
$
```



Orion



- Web enabled editor for IFS development
- Rich git integration
- Targeting Node, Python and Modern RPG developers
- RPG syntax highlighter RPG Free only (with SQL subset)



IBM and IBMiOSS Connectivity



- XML Service
- SQL Services
- JTOpen



XML Service



- Access to IBM i programs, service programs, shell commands, DB2
- Called locally or remotely
- Stateful or stateless
- Toolkits written for several languages



SQL Services



- Access system data through SQL functions
 - PTF
 - Security
 - Message Handling
 - Librarian
 - Work Management
 - Communication
 - Storage
 - Product
 - Spool
 - System Health
 - Journal
 - Java



JTOpen



- The Open Source version of the IBM Toolbox for Java
- Library of Java classes supporting the client/server and internet programming model to IBM i
- The classes can be used by Java applets, servlets, and applications to easily access IBM i data and resources



JSON support in DB2 for i



DB2 JSON Store



JSON_TABLE()



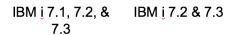
JSON Query support:

Predicates:

IS JSONJSON_EXISTS

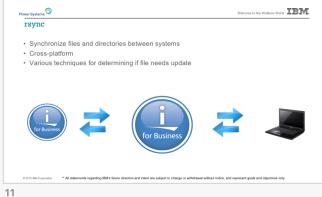


March 2016 2017



IBM j 7.2 & 7.3

^{**} All statements regarding IBM's future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only.



Welcome to the Waitless World **IBM** wget • utility that lets you download files from the Internet or intranet locations. · Supports: - HTTP, HTTPS, and FTP protocols proxies - non-interactive use 12

Welcome to the Waitless World IBN

tems 💿 SQLite

- · Zero-configuration SQL database engine
- Easy to use
- Useful for open source software that uses this technology.



0.2015 IBM Corporation ** All statements regarding IBM's future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only.

Welcome to the Waitless World IBM curl

· Both a command and a shared library

- Robust interaction with HTTP or FTP URL's
- Supports
- HTTP, HTTPS, and FTP protocols proxies
- non-interactive use
- advanced HTTP operations like HTTP POST and GET requests
- FTP upload
- user authentication
- much more!







0.2015 IBM Corporation ** All statements regarding IBM's future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only.



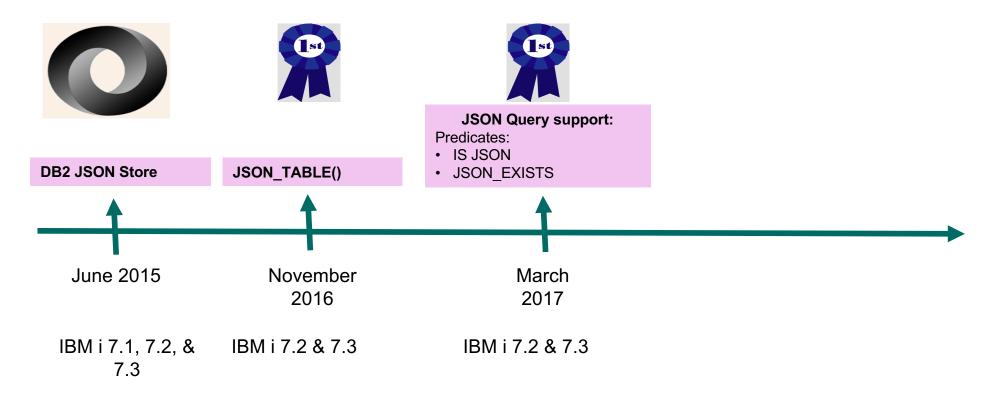
Major git enhancement

- Ability to perform a 'git clone' of an HTTP/HTTPS repository
- · Makes interacting with GitHub or BitBucket much easier!

```
bash-4.3$ git -c http.sslverify=false clone http://github.com/OSSILE/OSSILE Cloning into 'OSSILE'... remote: Counting objects: 1608, done. remote: Compressing objects: 100% (41/41), done. remote: Total 1608 (delta 15), reused 0 (delta 0), pack-reused 1567 Receiving objects: 100% (1608/1608), 4.01 MiB | 1.57 MiB/s, done. Resolving deltas: 100% (868/868), done. Checking out files: 100% (253/253), done.
```

** All statements regarding IBM's future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only.

JSON support in DB2 for i



How do you engage?



Participate in the community



- Ask questions
- Give advice
- Share code, tips, tricks, etc



midrange.com



- A community covering a wide array of IBM i topics
- Mailing list: archive.midrange.com/opensource

midrange.com

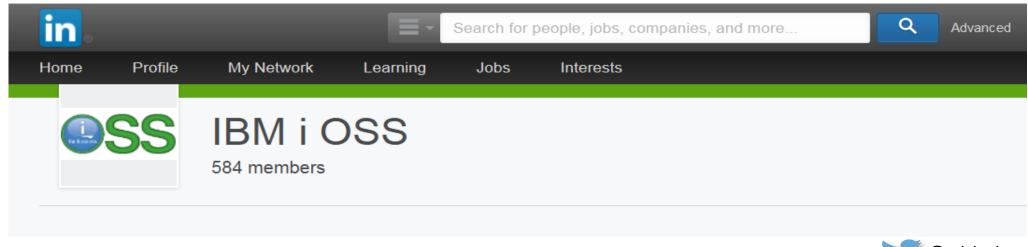


LinkedIn IBM i OSS group



- Great starting point for the latest news and events.
- Large member base

linkedin.com/groups/8531863

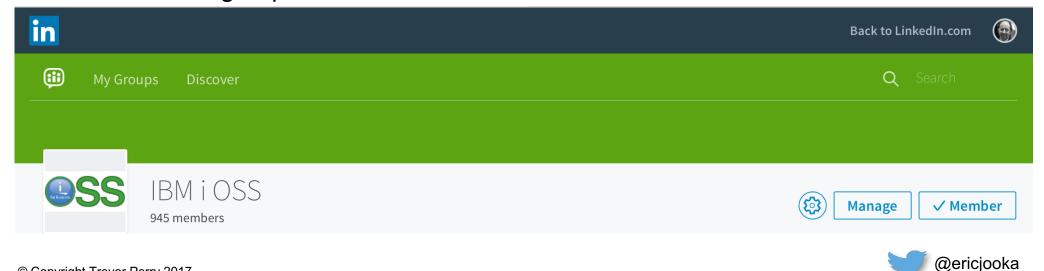


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linkedin.com/groups/8531863



Ryver IBM i OSS team

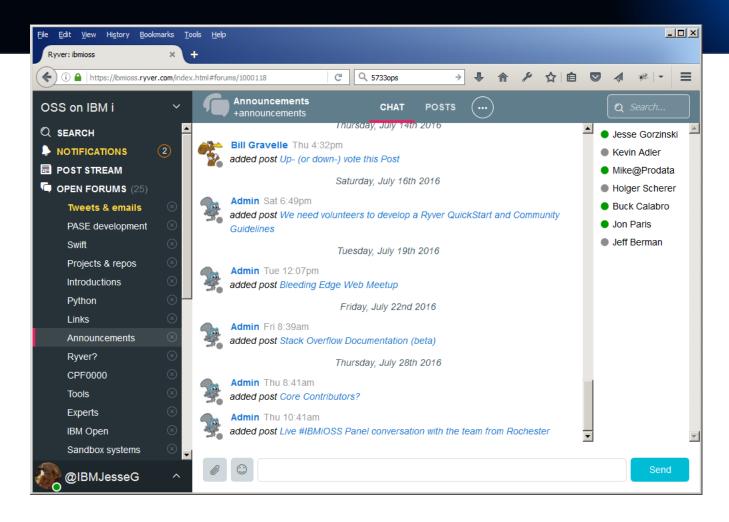


- Forums, chat, links to social media
- Invite link:
- https://ibmioss.ryver.com/application/signup/members/9tJsXDG7_iSSi1Q



Ryver IBM i OSS team





gitter chat at Club Seiden



gitter.im/Club-Seiden/IBMiOSS_Public





Club-Seiden/IBMiOSS_Public General chatroom for people interested in OSS on IBM i. OSS for RPG...





a proof reader @



Bill Gravelle @starbg

Live #IBMiOSS Panel conversation with the team from Rochester

Focusing entirely on Open Source Software/Solutions on IBM i for Power Systems servers. We'll hear about recent updates, maybe some work-in-process and possibly future surprises from Tim Rowe (@TimRowe_IBMi), Jesse Gorzinski (@IBMJesseG) and Kevin Adler (@kadler_ibm).

We plan to be experimenting with some new browser-based technology for this event: highly interactive and more engaging for all participants (both live and recorded sessions) - able to incorporate webcam video for anyone interested, embedded chat with public and/or direct messages, structured questions with upvoting capability and "jump to answer" feature for instant access (after the event).

Watch this space for your invitation link!

PS: The event is planned for 2August, Tuesday at 1100 CDT (UTC -5).



Alan Seiden @alanseiden

Jul 28 12:44

Thanks, @starbg ! Sounds good.

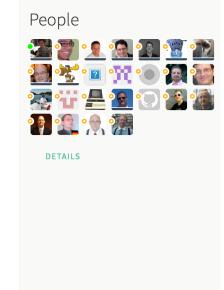


Bill Gravelle @starbg

Aug 01 17:06

The event is tomorrow, 2August, Tuesday at 1100 CDT (UTC -5).

Here's your invitation: https://www.crowdcast.io/e/IBMiOSS2Aug16



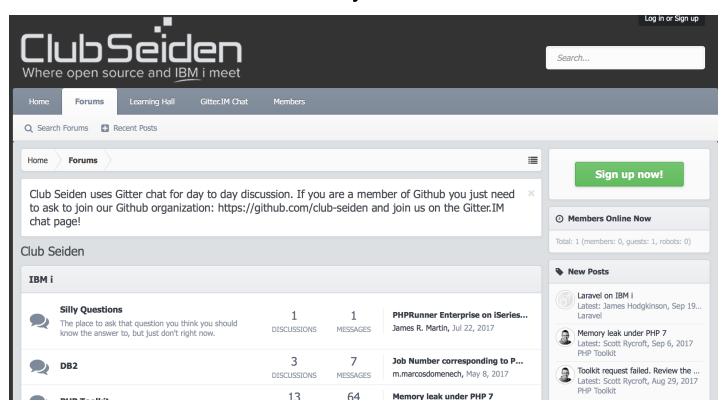
Q Search...

oka

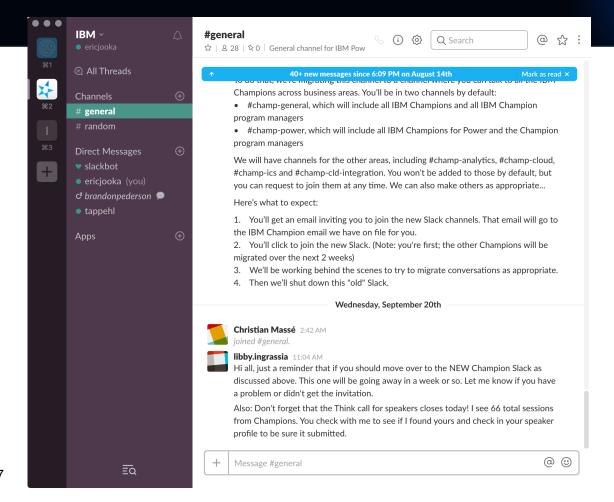
Club Seiden forums



http://club.alanseiden.com/community/



Slack











- •#IBMiOSS
- •#IBMi



Engage!

crowdcast.io/e/IBMiOSS2Aug16



Live #IBMiOSS Panel conversation with the team from Rochester

Tue, Aug 2, 2016 12:00 PM America/New_York



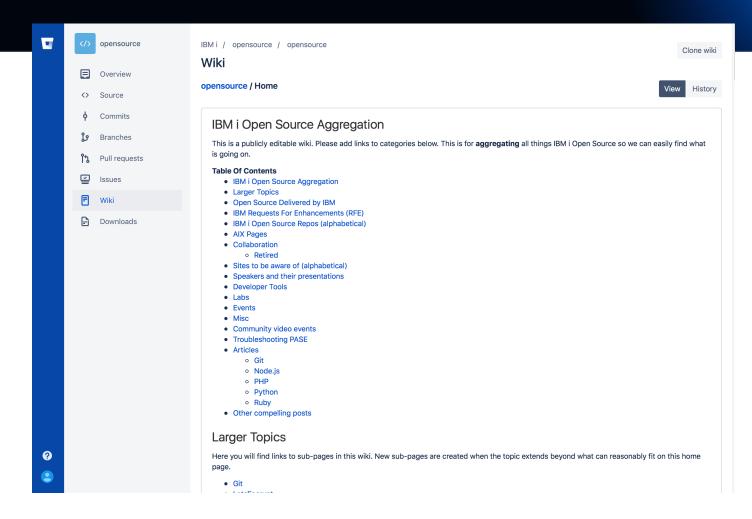








bitbucket.org/ibmi/opensource/wiki/Home



Watch out for...



Liam Allan



Works Of Barry

Open-source RPG. Node.is. PHP. on IBM i

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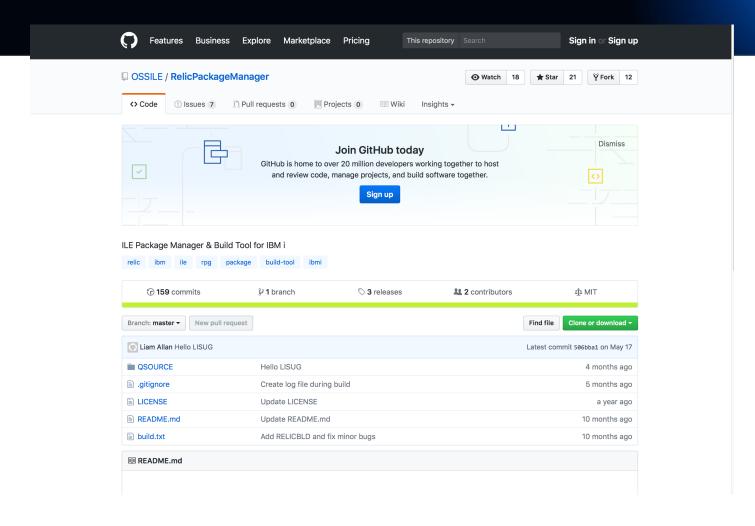
GitHub

Welcome to the Works Of Barry blog. Here you can find updates and latest blogs.

- ILEditor newest
- IBMiCmd Intellisense
- Barry SQL Precompiler overview
- EVFEVENT parsing for ILE error listing
- ILE tools for VSCode
- March Update
- IBM Champion 2017
- Azure Running Warcraft vanilla servers
- ILE Bringing iSeriesPython to Relic
- New Blog (GitHub Pages)
- Life Update (1)
- COMMON US 16
- TOP language (IBM i) object oriented?
- TOP Language for IBM i
- IBM i Language implementation
- IBM i stack-based virtual machine (in RPGLE)

https://github.com/OSSILE/RelicPackageManager





http://npp.worksofbarry.com



IBMiCmd

x86 Notepad++ plugin for ILE development on IBM i

Download



It's fast. The goal for IBMiCmd is speed and reliability. Modern development means quick compiles, no program stutter and no CPU hogging.



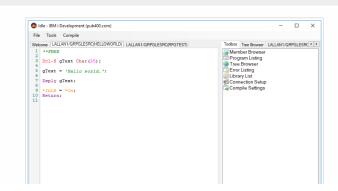
Agnostic. We support development with any ILE language, be it CL, RPG, COBOL, C, C++ - we provide the ability to code in it all. Error listing and syntax highlighting is available for all ILE languages.

http://worksofbarry.com/idle





An editor made for ILE development on IBM i



Idle

Idle is a the editor for the next generation of development for ILE applications on IBM i. Idle will support development with any ILE language, be it CL, RPG, COBOL, C and C++. Error listing and syntax highlighting is available for all ILE languages.

Idle is free while it's in the beta stages. At some point in the future it may become a licence based product.

Download now

Donate Install .NET Framework



IBMiOSS Success



- Delivering information from IBM i applications
- Building new integrated IBM i applications
- Expose IBM i to new communities
- Attract young talent to IBM i
- Encourages use of modern development tools
- Promotes a modern IBM i



How Does an Open IBM i Platform Enable Success for My Business

Trevor Perry
FrescheThinker





