

SPARTA

(not the city)

Rocket 2018 Update



October 2

What I will talk about (the Todd-Talk!)



- Open Source on z
- ZOWE

.

- What's Hot at Rocket in 2018
- Discussion



Why open source on the mainframe?

State of the Mainframe

A mature platform

- Impressive uptime
- Excellent transactional performance
- Robust logging

It's where the data is

- 92 of the top 100 banks
- 10 of the top 10 airlines
- 23 of the top 25 retailers
- 23 of the top 25 insurance companies



© 2018 Rocket Software Inc. All rights reserved.



© 2016 Rocket Software Inc. All rights reserved.

inas reserved.

The developer problem

Exclusive group of developers

High learning curve to join

Shrinking talent pool







© 2016 Rocket Software Inc. All rights reserved.





Traditional development cycle still the norm

Mainframe Teams Current State

.

.



© 2018 Rocket Software Inc. All rights reserved.

•

The open source world



Millions of programmers -- Billions of lines of free code

- As of April 2017, GitHub reports having almost 20 million users and 57 million repositories,⁶ making it the largest host of <u>source code</u> in the world.⁷
- Lower execution costs
- Lower development costs
 - Fast evolving languages, packages, and tools
 - Java, JavaScript, Typescript, Perl, Python, Go, etc
 - SciPy, Scikit-Learn, Spark, Dask
 - > git, cURL, PHP, Jupyter, Zeppelin

© 2016 Rocket Software Inc. All rights reserved.



Modern development cycle

The open source world



How to get the benefits? Move the data?



ETL solutions have serious drawbacks for analytics

- High cost high upfront cost and consumes CPU and bandwidth
- High latency credit card fraud best done in real-time!
- Security risks many data breaches have occurred due to ETL
- Moving data is a non-starter for DevOps
 - The world is moving to git
 - Corporations want all their sources in git repos ...even z

Solution for analytics demand problem – move the compute to the data

- Port open source to z/OS
 - Python and R -- #1 and #2 in data science (after Excel)
 - Spark
 - Anaconda
 - ...and Bash
- IBM MDS for Apache Spark enables easy (SQL) access to data
 - CICS
 - IMS
 - SMF
 - DB2
 - VSAM

.

K Rocket

Solutions for DevOps, Modernization and Optimization – move some of the compute to the data

- DevOps and Modernization
 - Port open source to z/OS (git, Perl, Python, cURL, PHP...)
 - SCCS, Automation, API economy
- IBM MDS can help with APIs
 - Make your data available in a secure way with customers and partners
 - MDS supports the API economy
- IBM MDS can help with optimization
 - RDV is much faster than ETL in elapsed time to transfer
 - ETL not optimized for last four zSeries releases
 - > MDS optimized for all including z14
 - Pageable large frames
 - o SMT-2
 - o SIMD
 - o zEDC



Rocket's open source offerings on z/OS

Open Source Languages on z/OS



- Perl 5.24 w/ASCII
- PHP 7.0.5 w/ASCII
- Python 3.6.1 w/ASCII
- Python 2.7.12 w/ASCII (beta)
- R 3.3.1 w/ASCII (beta)

.

٠







© 2016 Rocket Software Inc. All rights reserved

Languages are not enough

- Editors (vim)
- Source code control (git)
- Build utilities (autoconf, automake, bison, make)
- Web development tools (cURL, webalizer, zlib)
- File and Text utilities (diffutils, findutil, m4, sed)
- Compressors and archivers (bzip2, gzip, zip)
- User interfaces (Bash, jupyter)



Languages and Tools are not enough



- Math and Science:
 - numpy, statsmodel, sympy, scipy
- Analytics and ML:
 - scikit, pandas, blaze, odo, nltk, pyspark, dask
- Presentation:
 - bokeh, seaborn, Django, Flask, cairo
- Package management:
 - conda



© 2016 Rocket Software Inc. All rights reserved.

Is anyone really using this?

.

.



Yes. In fact, Rocket is building a community...



© 2018 Rocket Software Inc. All rights reserved.

.....



Some specifics on z/OS git

What about character encoding?

Rocket

z/OS Enhanced ASCII

- Source code is ASCII encoded
- All open source is compiled with -qascii option
- All open source is ported to support CCSID tagged files
- Automatic conversion is enabled via _BPXK_AUTOCVT
- Untagged files are presumed to be EBCDIC

Encoding Solution for z/OS git



This sets the default encoding for files that do NOT match any of the # following patterns. Many z/OS users will want the bulk of their files # as EBCDIC.

* git-encoding=iso8859-1 working-tree-encoding=ibm-1047

Some of the git configuration files MUST be ASCII.

.gitattributes git-encoding=iso8859-1 working-tree-encoding=iso8859-1 .gitignore git-encoding=iso8859-1 working-tree-encoding=iso8859-1

Some files are not text; leave them untouched, and tagged as binary files.

*.jpg git-encoding=BINARY *.png git-encoding=BINARY *.gif git-encoding=BINARY *.zip git-encoding=BINARY working-tree-encoding=BINARY
working-tree-encoding=BINARY
working-tree-encoding=BINARY
working-tree-encoding=BINARY

z/OS Git and extensions and hooks



- Phase 1 Store sources in git repos but build with SCLM
 - REXX exec to migrate z/OS partitioned datasets to USS file systems
 - REXX exec maintains additional stats files for
 - ISPF stats
 - File type binary vs. text
 - Sequence number restore option
 - Reverse of the above
 - Also developed REXX scripts to migrate SCLM history to git history
- Phase 2 Store sources in git repos and build from USS

© 2018 Rocket Software Inc. All rights reserved.

z/OS Git and extensions and hooks

.

۰



- Phase 2 Store sources in git repos and build from USS
 - Python code to enable all sources to be built from USS (still in progress)

© 2016 Rocket Software Inc. All rights reserved.



Introducing Zowe

²⁴ The user experience problem



Green screen technology

Heterogeneous set of browser-based applications

No cross-application cooperation

														£ 337'	And the second second		
								000			TN3270	TN3270			and itility	13	
								Men	u <u>U</u> tili	ities	s <u>C</u> ompilers <u>O</u> ptions <u>S</u> tatus <u>H</u>	<u>C</u> ompilers <u>O</u> ptions <u>S</u> tatus <u>H</u> elp					
								ISPF Primary Option Menu								and the second s	ANN NOUN NEL H
remote screen of Robert Penny														- manifeld		A DECERCIÓN DE CARA	
ne Virtual Desin: 🗴 🔪 🧮 BM o 'OS Managemer	E X										0				- HILLINGSTRATE	The second se	
A Not secure Mages//rs2211443/zoom										* 11	<pre>""minal and user parameters</pre>		liser TD · TS6248	p lettigt fill		·····································	A CONTRACT OF A
i adet 📒 Jaa 📋 referenz 🐧 mi	R XE SEllibrane Home 🧧 2007	3.11X B 648+	icket 🧧 Dack	🥛 pitua refe	rence 🧾 Ba	A12518 📒 Zoe	•				inlay source data or listing			Estentoren	#= CEERINDERER		
aIOS Management Facility										Thicana pipers	pate or change source data		Torminal : 3278	- 4 HE	1 100		
Wetcome at	WorkSows a										form utility functions						A Design of the second se
											form utrilly functions		screen : 1				
for Modellour											eractive language processing	g	Language. : ENGLISH		100		
icoles Simplifies Taska II	Here we lists trough guided dap-based verblows, and provides administrative functions for analysing voletile wesponsibilities and tracking progress.										omit job for language process	sing	Appl_ID . : ISR	(Fr	State of the state	sector and a secto	
Addets *	ss - 🗊 Adve -										er TSO or Workstation comman	nds	TSO logon : ROCKPROC		A CONTRACTOR OF STREET, STREET	ALC DR. DO	
5. Nofilm	No film repoiled										form dialog testing		TSO prefix: TS6248	1 allow and the	ALL DECK		
- Workfree Ro	ne Description	W	water Marr	ter At		where Sparler		Tatus	Percent Complete		prary administrator functions	s	System TD : RS28		The second s		
- Ita	The	Fi	ter Fita	- n	ter Fi	ter fiber					I program development product	ts.	MVS acct : ACCT#	18 STOR	A STATE		
Execute Adm Program For Highlan, 0	e Basch Reetart Deployment - Deployment	Restart Program For 1	1. 104	Aares-OC d	Public M	CTUA REPU	LEX01 R522 (R522)	AC In Progress	15		Configuration Library Manage	ar	Pelesse : TSPE 7 3			A REAL PROPERTY.	
T 105701 gam	R Execute Adventioners	engineering program 1	3 84	Adminition 🕍	Print 18	5791 #SPU	LEX01 8522 (R522)	Complete	1000		Configuración Library Manage		Kerease ISFF 7.5				
Interfaces TSS791 ODA	nit Encla Africanan	engineering program 1	3 184	Adven-DC d	Parts ad	(SH RSPU	LEX01 8522 (9522)	AC in Progress	15		Deserve of TRM						
19 TISTOL 060	Viter Evenue Administration	anglessing program 1	1 80	zamin-00 al	Punte an	5791 R5PL	LEX01.8522.015221	Complete	100		- Property of IBM			1		State of the second second	
C 196791 ADB	EP2 01 Encode Admin Satur	Restart Rogans For 1	1 80	Asten DC	Public ad	ETH RSPU	LEX01 R522 (R522)	All in Propess	15		ight IBM Corp. 1980, 2017.				STATISTICS.		C IDEN
1 11 755781 only	Energia Chi Energia	pue 1	2 104	Anin-OC	Per al	C16 83PU	LEX01 8522 (8822)	With Program	20		s Restricted Rights -	ity					
ci 155941 - per	Everyle Admin revers	engineering program 1.	3 84	Aeren-OC	Patric M	SPHT RSPL	LEX01 R522 (R522)	With Program	15		' disclosure restricted						
Tablet - ger	2 Energie Adres mark	angeneering program. 1	3 184	Amen CC	Puller Ind	tilet RSPLI	LEX01 R022 (R022)	Complete	-		Contract with IBM Corp.						
🖉 155791 Om	TTP 01 Execute Adverses	mangpopun 1	3 189	Admo-DC	These as	5791 RSPU	LEX01 #522 (#522)	of Conside	-			ard	E8=Forward E9=Swap				
E3 195791 ADB	EP2 PTF Execute Advantised	AnterProperty 1	1 100	A4000-DC d	Prote M	1791 RSP(J	LEX01 R022 (R522)	ur Consiele	100			uru	ro-rormara ro-Swap				
7 19291 04	Englishment Erry Englishment og		1 84	Amon CC	Party M		LEXAL \$100.0410	E in Discuss			icei						
C 1994 ar	accelli French Libre mars	and an and a second sec	1 194	Amen TC 0			PVA(\$127.047)	- Constant	R								
				He	HERE I								4 /1-				
T35041 - an	tank load 1 Execute CAI Earth per	pan 1	2 184	Aamo-DC d	Paint M	Ibri RSPU	LECO1 R022 (4822)	Millio Propess	15								
🖸 gestesi21	Ensuita Administration	angeneering program 1	3 180	Aemo-DC d	Public bd	5856 RSPL	UEX01.R522 (A322)	All in Programs	16								
Aanie OEN	angie debbies- Exercite Admin miero	engineering program 1	3 184	Aeren-DC	Patrix IN	Sett RSPU	LEX01 R622 (PL622)	Conglete	100								
Advise GENI	ample debitives via Emotita Administratori	angheering program 1.	3 80	Adress-OC G	annat M	SHI REPLI	LEX01.8522 (8522)	✓ Conglete	100								
CVE47CHV	antion Execute CM Battin per	pan 1	1 89	ABNO-DC	Prote tel	ien Repu	LEKI1 R522 (R522)	All in Propress	15								

© 2016 Rocket Software Inc. All rights reserved

²⁵ The Opportunity

- Create a unified environment
 - Homogeneous desktop-like platform
 - Modern look-and-feel
 - Single sign-on

.

- Cross-application communication between vendors
- Cross-application launching
- Access to legacy applications







²⁶ The Opportunity



- Attract the new generation of developers
 - Best-of-breed web technologies
 - Simplified application architecture
 - Self documenting REST-APIs
 - Reduced learning curve
 - Open source effort



© 2018 Rocket Software Inc. All rights reserved.

²⁷ The Opportunity



Modernize and enhance existing applications

Free applications with paying upgrades

- Converge onto a single platform
 - Unified technological stack



© 2016 Rocket Software Inc. All rights reserved.

²⁸ The Opportunity



- Increase application development speed
 - Fast development through standard web-app architecture
- Improve release agility
 - Faster delivery of small targeted changes within an app
 - In-between-release delivery



© 2018 Rocket Software Inc. All rights reserved.

A Brand New Experience

.

.





© 2016 Rocket Software Inc. All rights reserved. 29

The Opportunity



Improve responsiveness to customer needs

- Make, test, and deploy changes in days
- Create, test, and deploy custom apps in weeks

Involve customers in the development effort

- Customers create their own applications and contribute them back to the community
- Direct insight into their needs and perspectives



۲

.

.

The Plan

³² How We Get There



Create a web-based desktop environment

Rocket's contribution to ZOWE

Expose core z/OS functionalities through REST APIs

- The empowering move that makes it easy for web developers to master the mainframe
- Plug into the z/OS security model
 - A no-compromise zone for mainframe operators

³³ How We Get There

Drive adoption

- Commercial offerings on top of Zowe
- Customer Advisory Board under OMP

Provide support

- Training material and documentation
- Commercial support



© 2018 Rocket Software Inc. All rights reserver



Jopen Source Transformation



Rocket

- Founding member of a new Open Mainframe Project
 - https://www.openmainframeproject.org/projects/zowe
- Member of the OMP Governing Board
- Part of the Linux Foundation
- Partnership with IBM and CA



The dawn of a new mainframe ecosystem

ZOWE

.

Rocket Top Mainframe Organization Solutions

Rocket MXI for z/OS

Monitor z/OS systems easily for optimum efficiency

Rocket Catalog Recovery Plus

> Provide uninterrupted access to data without touching applications

Rocket Performance Essential

 Significantly improves overall batch processing performance by dramatically reducing I/Os

Rocket API

36

> RESTful Web Service APIs and Application Integration

Rocket BlueZone Web

Browser-Based Terminal Emulation

Rocket LegaSuite Web

> Repurpose Enterprise Applications as Web Apps

Rocket DASD Backup Supervisor

> Automated DASD full volume backup & recovery

Rocket DR/Xpert

Disaster recovery assurance through automation



Rocket


MXI for z/OS





- Reduce exposure to system interruptions by identifying and remediating issues before they affect business operations.
- Decrease time and effort spent on monitoring and auditing through an automated Solution with instant access to vital information.
- Accelerate implementation and time to value: MXI is quick to install, easy to use, and won't tax IT staff.
- Lower-cost, small-footprint monitoring solution requires minimal CPU and disk resources, leading to 40% cost savings compared to other solutions
- Base product: Rocket MXI is ordered as a base module that monitors z/OS systems. MXI monitoring can be extended with optional plug-in modules for the following subsystems:
 CICS • DB2• TCP/IP • Message Queue (MQ)• Storage Manager



Provides relevant system information through either web or traditional ISPF and REXX interfaces.

Consolidation and Analysis Engine (CAE) communicates with MXI on z/OS and provides an end-to-end view of all z/OS systems.

Presents system information via easy-to-read dashboards

Offers customizable, intelligent alerting through email, z/OS operator commands, SNMP, and Write-to-Operator (WTO)

Includes historical comparative data and analytics

Displays all information in easy-to-read graphical formats

٠

Con	<mark>DASH-RS</mark> mand = <u>=</u> >	22	HOME-	CPl	J 54 l	JIC 6	5535 I	PAG	0	<mark>>- Ro</mark>	w 000 Scro	001 011 <u>=</u>	of 000180 ==> <u>PAGE</u>
Sys	plex RSP	LEX0	1 LPAR	RS2	2	JES2N	ode B(OSTO	N				
z/0	s 02.	03.0] IPLVo]	RZ2	03D 1	[PLDa	te 20	018/(09/01-	08:46	:24		
Das	hTnfo												
*7/	05												;
<u>~/</u>	400			* Do			Numb	- M	A Doo	0111000		Mum	0.11
	Area		USE/0	, Kei	source				, Kes	ource		NUM	
	HV-Comm		30	* Rea	ALAFC		206450	00	Bad	ASID			608
*	E-CSA		71	* Rea	ALAFCB		15:	30 °	* Fre	eASID		2	861 *
*	E-SQA		80	* UI(0		655	35 *	* Job				14
Moinster			A 🖻				_						704
et Mainstar.	Boards Dashboards	MXI Co	mmands Configur	ation v Tools	×			MX					
ms Overview ZOS Sys	tems Overview	•	conigu						(mer)				
ent Status Summary		© ? x	▼ Top-N by CPU			@?x	✓ Lowest by	AFC				© ?	x
Unackno 🖌 A	verage Page SIO Smool	Non 🔺	Average Cpu Percent Histogram	Name	Cpu Percent Ave	erage MSU	Available Frame Count	Histogram	Name	Page Rate	Available Fram Count Below	e High Uic	<u> </u>
Alerts Alerts C	PU Rate 0.00 0.000	ASIDs	81.80% 50.40%	RS28 RS22	60.00%	212	30,117		RS73 TST		0 3,00	8 65,535	l i
∆5 0 2i	5.00% 0 5 23.94%	0	45.80%	RS31 RS74	70.00%	4	237,332		RS49 RS52		0 3.79	05,535	
A4 0 12	2.80% 0 3 5.61%	4	34.80%	RS35	82.00%	4	458,244	_	DVLP		0 3,33	4 65,535	
▲231 0 50	20% 0 462 60.38% 0.40% 0 72,117 60.38%	808	25.00%	MNT	23.00%	4	575,332		RS21		0 3,08	8 65,535	
▲61 0 4 ▲74 0 7	.00% 0 518 50.38% .20% 0 1,350 50.38%	162	23.20%	DVLP	50.00%	6	648,121 650,869		RS07		0 3,551	5 65,535	
▲92 0 1 ▲73 0 8	.80% 0 172 50.38% 40% 0 4 50.38%	15 2,482	22.00%	RS45 TST	9.00% 4.00%	3	702,735		RS35 RS32		0 3,85 0 3,55	2 65,535	
▲183 0 61 0 0 48	1.60% 0 4,288 50.38%	1,189	20.20%	RS49 RS33	6.00% 6.00%	4	750,112		RS44 RS74		0 3,39	3 65,535 7 65,535	.
▲12 0 12	2.20% 0 58 29.03%	05	17.80%	RS47	9.00%	3	776,183	1	RS34		0 3,87	8 65,635	
Summary		⊙ ? x	V System Memory			⊙ ? x	V Top-N SM	S Storage G	roups by Percen	t Full		© ?	×
Events 0 V			Name 🔺 🛛 Au	Storage CSA	SQA E-CSA	E-SQA 🔺	Percent Full H	fistogram	Name	Volume Count	Free Space	Total	<u> </u>
0 0 🗸			MNT	0.00% 21.27%	25.08% 31.77% 22.78% 30.10%	21.90%	99.71%		ARCHIVE	15	137.192 MB	48.616 GB	
4 0 ✓			RS08 RS07	0.00% 23.74% 0.00% 10.70%	24.10% 13.81% 23.43% 12.08%	13.55%	97.09%		DEVG1	13	1.357 GB 38.379 GB	46.618 GB 847.978 GB	
1223 0 ✓			RS21 RS22	10.00% 27.15% 30.00% 45.89%	34.41% 18.50% 58.82% 71.98%	31.41% 80.31%	94.84% 91.45%		DB2G1 TSOG1	88	39.177 GB 44.070 GB	758.553 GB 515.515 GB	
378 0 ✓			RS23	0.00% 31.18%	40.60% 46.01%	38.08%	91.45%		DB2VSG1 EMCCXSG	14	7.033 GB	82.283 GB	
			RS26	4.00% 24.51%	37.11% 14.08%	28.49%	91.37%		DB2G2	14	7.097 GB	82.283 GB	
			R527 R528	0.00% 03.54%	53.68% 94.62%	57.45%	90.92%		SG1	32	21.523 GB	237.010 GB	
			RS31 RS32	0.00% 24.09% 0.00% 21.83%	23.72% 29.03% 23.63% 34.35%	19.29%	88.10%		ARYSG17 ARYSG15	8	2.598 GB 2.604 GB	21.937 GB 21.937 GB	
			RS33	0.00% 27.54%	20.22% 31.23%	20.15%	87.79%		SRC DB2G1	9	9.038 GB	74.038 GB	•
nin			🚨 💭 1 min 🗼 Defi	aultDomain	21.00/4	07.4078	8 8 1 min	Δ1.					1
Listing												@?x	
 Subject RS22 	Event Type Mxi HC Alert	Summary Health Check	Notification JES NJE SECU	RITY with result 12 and ex	ception count 3 for RS2	Receive 9/28/2011	d 8, 7:35:09 AM		Updated 9/28/2018, 7:35:09	АМ	Rep. Cour	t.	
RS28	Mxi HC Alert	Health Check	Notification JES_NJE_SECU	RITY with result 12 and ex	ception count 2 for RS2	9/26/201	8, 2:31:54 AM		9/26/2018, 2:34	AM	1		
RS22 RS22	wa Hu Alert Mai HC Alert	Health Check Health Check	Notification ASM_PAGE_ADD Notification ASM_LOCAL_SL	with result 8 and exception OT_USAGE with result 8 a	on count 1 for RS22 and exception count 1 fo	9/28/201 r RS22 9/28/201	s, 7:35:09 AM 8, 7:35:09 AM		wz8/2018, 7:35:09 9/28/2018, 7:35:09	AM AM	1		
RS22	Mxi HC Alert	Health Check	Notification CNZ_EMCS_HAP	DCOPY_MSCOPE with n	esult 8 and exception co	unt 9/28/201	8, 7:35:09 AM		9/28/2018, 7:35:09	AM	1		
R522 R522	Miti HC Alert	Health Check	Notification CSAPP_MVRSH		suit 8 and exception cou suit 8 and exception cou	nt 1 9/28/201	8, 7:35:09 AM		9/28/2018, 7:35:09	AM	1		
8922	Moi HC Alert	Health Check	Notification CSAPP_SNMPAG	SENT_PUBLIC_COMMUN	ITY with result 8 and ex	cepti 9/28/201	8, 7:35:09 AM		9/28/2018, 7:35:09	AM	1		
BC22	My LIC Alort		MARKAN AND A LIVE AND A	and a second sec					1 min 01 (1110 11 (2011)				
3 RS22 3 RS32	Mxi HC Alert Mxi HC Alert	Health Check	Notification USS_INETD_UN Notification CNZ_SYSCONS_	PD_MODE with result 8 a	nd exception count 1 for	RS32 9/27/201	8, 8:10:30 AM		9/27/2018, 8:10:30	AM	1		

D 1	1								_	_	_	_				_				Aver	age Cpu Percent	- Google Chrome		- 0	
Rocket	Mai	nstar.															M	X		Add a vari	it secure http able	əs://nwt-vm-m>	d02.rockets	oftware.com/	webclient/trend(
Home		Messa	age Board	s II	Dashbo	ards	IXM	Commands	Confi	juration	 Tools 		~												
DS Systems	s Overvi	ew zos	Systems C	vervie	ew		T																		
													_					1							
	t Status	Cumme					6.2	Y A Top-N k	W CDU				_	61.2	•	st Lowerth	AFC					\		\sim	\sim
* clement	t Status	Junna	y					+ rop in a	by CFO					~ · ·		• Lowest b	y Ai C			\sim	~~~	~	-	$\int $	4
Namo .	Unack		Average	Page	SID	Snool	Rousabk	Average Cpu	Histogr	am I	Name	Cpu Per	cent /	Average MSU		Available Frame Count	Histogram	Name	Page Rate					Average Cpu P	rcent:
Name -	Alerts	Alerts	" CPU	Rate	010	Spoor	ASIDs	61.60%	6		RS28		60.00%	212	н.	30,117		RS73						• 6:00:02 PM: 519	
DVLP	∆30) 0	23.20%	0	3	23.94%	2	50.40%	6		RS22		50.00%	208		180,198		TST					-		
MNT		5 0	25.00%	0	5	23.94%	6 0	45.80%	6	1	RS31		70.00%	4		237,332		RS49							
RS06) 0	7.00%	0	8	5.61%	17	42.80%	6		RS/4 RS26		30.00% 62.00%	3		305,851	_	RS52		5:35	PM 5:40 5:	:45 5:50	5:55 6:0	0 6:05	6:10 6:15
RS07 RS21		+ U 7 0	0.20%	0	452	50.385	4	30.80%	6		RS73		18.00%	6		531.284		RS06							
RS22	▲23	1 0	50.40%	0	72,117	50.389	608	25.00%	6	1	MNT		23.00%	4		575,332		RS21		1 Hour	▼ to ▼	Current Time	18		
RS23	6	1 0	4.00%	0	518	50.389	162	24.60%	6 🚃	F	RS34		33.00%	4		646,121		RS33		0	3,000	00,000			
RS25	▲74	4 O	7.20%	0	1,350	50.389	1,163	23.20%	6		DVLP		50.00%	6		650,869		RS07		0	3,575	65,535			
RS26	9	2 0	1.60%	0	172	50.389	5 15	22.00%	6		RS45 TOT		9.00%	3		702,735		RS30		0	3,852	85,535			
RS27 RS28	A 18	s 0 3 0	8.40%	0	4 288	50.387	2,402	20.20%	6 💻		RS49		6.00%	4		750,023		RS44		0	3,398	65,535			
RS31	_ 10) 0	45.80%	ō	9,200	29.039	20	20.00%	6	1	RS33		6.00%	7	-	775,397		RS74		0	3,877	65,535	•		
RS32	▲1	2 0	12.20%	0	56	29.039	65	17.60%	6 🚃	ſ	RS47		9.00%	3		776,183		RS34		0	3,878	65,535			
🔏 🔂 1 m	in 🔥	DefaultDon	nain					🖓 💭 1 m	nin 👗							🔏 🔂 1 min	A.								
w Event C							612	X Nr Suctor	Momo					617	•	M Top-N CM	C Storage	Croups by Dors	ont Full			63.2			
• Event 5	ummar	110						* System	memor	y Ann Channe	004	0.04	5.004	- W	^	V TOP-N SP	IS Storage	e Groups by Perc	entrui		τ.	- 	<u>^</u>		
All System E	vents	0 🗸						DVI P		Aux Storage	21 27%	25 88%	E-USA 31.77	E-SUA 21.05%		Percent Full	Histogram	Name	Volume Count	Free S	pace Ca	anacity			
Performance		0						MNT		0.00%	18,79%	22.78%	30.10)% 17.71%		99.71%		ARCHIVE	1	15 137	.192 MB 4	46.616 GB			
renormance		4						RS06		0.00%	23.74%	24.10%	13.61	% 13.55%		97.09%		-							
Memory		0 🗸						RS07		0.00%	16.70%	23.43%	12.08	3% 13.37%		95.47%			: I			la			
Storage		1223						RS21		10.00%	27.15%	34.41%	16.50	31.41%		94.84%		I Eas	IIV CU	ISIC	Smi	zac)ie	an	a re
		378						RS23		0.00%	31.18%	40.60%	48.01	% 38.08%		91.45%									
AddressSpac	ces	0 √						RS25		0.00%	89.86%	58.16%	96.88	48.97%		91.41%		ovet	om d	late	n in	m	าวเ	nin	aful
								RS26		4.00%	24.51%	37.11%	14.08	28.49%		91.37%		ຊ ວງວເ	em u	ιαια	2 II I		zai	111 19	JIUI
								RS27		2.00%	76.38%	50.27%	70.52	43.68%		91.33%		-							-
								RS28		0.00%	03.54%	53.68%	94.62	2% 57.45%		90.92%									
								RS32		0.00%	21.83%	23.63%	34.35	5% 19.70%		88.13%									
								RS33		0.00%	27.54%	28.22%	31.23	20.15%	-	87.79%			1		! 4				4!
								RS34		0.00%	13.76%	21.98%	27.88	67.45%		86.80%		I Con	text-s	ser	ISIT	ive	ar	aiv	/TIC2
🔏 🔂 1 m	in							👪 🔂 1 m	nin 👗	DefaultDoma	in					🔒 🔂 1 min	A.							J	
													_					lidan	tify u	ınd	arh	vinc	n n	rok	Jor
✓ Event Li	isting																	Inden	uny u	IIIU	CII	ynng	JΡ	IUL	лсп
Ack. Pri.	. .	v Free St	Fuent T ace on ARCHIV	vne E		0 ?	Summary	lumes by Free Space			0 ?	X Y Propert	ies of ARCHI	Red	eived © ? >	E-00 AM					•		•••		
	R					- Free Spa	ce Free Space	Histogram Name	Fragr	entation Free Ds	sobs In Largest Fre	V Identifica	tion	ARCHIVE MSCRI EX1		1.54 AM			clicks	S					
8 3	R					- 125	25.00 MB	ARCHV3	Index	678	Extent 8,710 1.68 M	Name Storage Grou	n Time	ARCHIVE		5:09 AM				U					
3	R					- 100	VB 20.13 MB 19.29 MB	ARCHV2 ARCHV1		681 682	8,814 1.68 MB 8,610 1.68 MB	Configura	ition	DS01		5:09 AM									
II 3	R	-				-75 N	B 10.70 MB	ARCHV4 ARCHV7		711 529	8,778 0.84 MB 521 1.68 MB	Last Update 1	lime	2004-04-30		5:09 AM									
3	R	-				.50 N	6.73 MB 6.39 MB	ARCHVE ARCHVB		610 625	476 0.84 M 389 1.12 M	Migration Eligible For A	uto Migration	false		5:09 AM									
3	R	-				- 25 N	6.28 MB 5.01 MB	ARCHVA ARCHVD		500 481	252 1.68 MB 285 1.68 MB	Eligible For In Auto Migrate	Aerval Migration System	false		5:09 AM		L E a c		\sim	c to	n na	\rf/	orm	12n
3	R	·	10.00			.0 ME	4.60 MB	ARCHV8		508	255 1.68 M	 Backups Eligible For A 	uto Backup	false false		5:09 AM		Las	y acc	62	5 IL	ν μα	7117	JIII	an
U 3	R		12.00 P		Friday, S	otoo aptember 28, 20	18					Guaranteed E Guaranteed E	ackup Frequent Jackup Frequent	true		5:09 AM						•			
	R	MSCP	LEX1:ARCHIVE													J:30 AM		l dent	th an	alv	202	s 2	nd		ista'
👪 🔂 1 m	in 🗛 🕻	18 10 14	in A Detautuor	nain	09/28/2	18 18:37:38	3 1 1 min	Δ1				Ma 10 1m	A Deraut	Domain				l ach	ui an	ary	000	J, U	IIU	00	500
		Y Event I	istina)?x	ercent Full	0 ?)								-		
		Ack. Pri	Subject F	vent Type			Summan	Y			Received		Rep.			1		I actio	Snapi	ie t	orn	nats	S		
		0 2	ARCHIVE SI	//S Storage	Group Absolute	Free Space Wa	rning SMS Stor	' age Group ARCHIVE has 137.	.192 MB of free :	pace (capacity is 4	. 9/13/2018, 3:40:40	AM 2	2478	40 60				-		· • ·	••••				
		B 2 B 4	ARCHIVE SI ARCHIVE SI	//S Storage (orage Group	Group Free Spa p Projected Avail	ce Warning able Space Wa	SMS Stor ming In about 0	age Group ARCHIVE is 99.711 0 milliseconds, the Storage Gro	% full. oup ARCHIVE in	on System TST will .	9/13/2018, 3:40:40 9/13/2018, 3:40:40	AM 2 AM 2	2478	20 0 80)			L							
														99.71 %											
												5		Percent Full											
														🖸 1 min 🔥 Defaulti	Jomain										
		a d to	in A DefaultDor	nain								1 1 1				1									

.

٠



Easily customizable and readable dashboards present system data in meaningful, actionable formats

888

Context-sensitive analytical assistance helps quickly identify underlying problems—typically with only one or two clicks

Easy access to performance data for ad hoc queries, indepth analyses, and customized management reports in actionable formats

© 2016 Rocket Software Inc. All rights reserved.

•

S2 - RS22 - BlueZone Mainframe Display

.

.

File Edit Session Options Transfer View Script Help

🗋 📂 🔚 🚔 🐰 🖻 遇 📝 🥀 🍏 🕲 🏠 🦉 🗕 💷 🕨 👂

– 🗆 X

....

MX Co Sy z/ Da



File	System	Dataset	Module	Unit	Sysplex	SMS	Memory	WLM	JES2	
MXIME	NU-RS22-	HOME-	CPU	54 UI	C 65535 F	PAG	0 R	low 00	0001 of	000015
Command	===>							Scr	o]] ===	⇒ <u>PAGE</u>
Detail										
MXI Ver	sion 6.2	Genlevel	170322							
Group	Commer	nt			Memb	ers				
CICS	CICS P	'lug−In Co	ommands			29				
DATASET	_ Datase	t Command	S			11				
DB2	_DB2 P]	ug-In Com	mands			16				
DCM	Storag	e Manager	Plug-In	Comma	.nds	20				
IP	TCP/IP	Plug-In	Commands			14				
JES2	JES2 C	Commands				8				
MEMORY	Memory	Related	Commands			16				
MODULE	Load N	Iodule Com	mands			10				
MQ	MQ Ser	ies Plug-	In Comma	nds		13				
RACF	RACF C	Commands				6				
SMS	SMS Co	ommands				9				
SYSPLEX	Sysple	x Command	S			7				
SYSTEM	z/oss	System Com	mands			39				
UNIT	Device	Commands			4	15				
WLM	Work1c	ad Manage	r Comman	ds		14				
ASID 05	68 (TS57	'78) CIC	S(CICSA)	DB	2(DSN1) N	1Q(CSQ)1)			
		,								
/B Rea	ady (1)	192.168.55.22		S22T0033	3			NUM		04,015

Commands and Dashboards Available in both CAE and ISPF Interfaces. Drill down for greater detail with point and click.

File z/OS RACF CI	ICS TCP/IP DB2 MQ	Storage	
IDASH-RS22HON	MECPU 54 UIC 655	35 PAG 0>- Row (000001 of 000186
splex RSPLEX01 LPAF	R RS22 JES2Node	BOSTON	
OS 02.03.00 IPL\	Vol RZ203D IPLDate	2018/09/01-08:46:24	
shInto			
/0S			*
		Amper * Resource	
		1530 * EreeASTD	2861 *
		SEESE * Job	
	15 * PagePate		721 *
SOA		55 * TSO	32 *
Fixed		191 * WTOR	81 *
Aux		2 * MissASTD	0 *
Shool			
*****	File System Dataset Mod	lie Unit Sysplex SMS Memo	ry WLM JES2
Jobname CPI	MYTDAPS22HOME	CPU 60 UTC 65535 PAG 0	- Pow 000001 of 000077
TS57702 37.	Command ===>		Scroll ===> PAGE
MXIMAST 1.9	Jobname =TS57702 Ty	be =* System =RS22	
IZUSVRAT 1.8	Scope Ma	kuser 4306 Free 2861	Bad 608
WLM 0.1	Field	Value	
ID 0568 (TS5778) (Address Space Name	<u>TS57702</u>	
	Step Name	*OMVSEX	
	JES Joh TD	50683083	
	JES Job Class	50003903	
	Address Space ID (Hex)	0614	
	Position	IN	
	Swap Reason	DW	
	Real Storage Frames	2162	
	Start EXCPs	0	
	CPU Percentage Usage	38.00	
		0.00	
	EXCP Count	0.00	
		04.16.53 8916	
		00 0010	
	SKB CPU IIMe	00.0010	

6	h	XS	0		Dasilbuar		Annanas	configuration - Tool					ß
fau	t Mess	age Boa	rd	Event Summary: All	System Events	Event Summary: Inte	face Performance	Event Summary: Performance	Event Summary: User Cata	log BCSs DV	LP Event St	immary: All CICS Events	8
	Pri.	1	0	Correlation	Event Type		Summary		11	System		Subject	Received .
	3				Db2 Zos Subsys	stem Edm Pages In Us	The EDM Pool i	s 100.00% used on DB2 DCB1 on	RS27	RS27		DCB1	9/6/2018, 4:06:35 /
	ŧ				Catalog Cache I	Hit Ratio Too Low	The catalog ICF	RSPLEX01.EB1G.CATD on RS28	has an average hit ratio of 0.5	(RS28		ICF.RSPLEX01.EB1G.CATD	9/6/2018, 10:38:40
	5				Mbti SYSTEM A	lert	MXI Scope LO_	SYS_REALAFCB was matched fo	RS25	RS25		RS25	9/8/2018, 12:07:28
	ł				DB2 Z/OS Three	ad Class 1 Elapsed Wa	m Class-1 Elapsed	Time is 23:22:51:34.471 for LB1A	LB1ACDC1:186CC6E0:12:08	RS28		LB1A:LB1ACDC1:186CC6E0	9/8/2018, 12:14:14
	ŧ.				DB2 Z/OS Three	ad Class 1 Elapsed Wa	m Class-1 Elapsed	Time is 23:22:51:34.487 for LB1A	LB1ACDC1:188CCF80:12:08	RS28		LB1A:LB1ACDC1:186CCF80:	9/6/2018, 12:14:14
	ł				DB2 Z/OS Three	ad Class 1 Elapsed Wa	m Class-1 Elapsed	Time is 23:22:10:39.342 for LB1A	LB1ACDC2:187ADB00:12:48	RS28		LB1A:LB1ACDC2:187ADB00:	9/8/2018, 12:56:10
	5				DB2 Z/OS Three	ad Class 1 Elapsed Wa	rn Class-1 Elapsed	Time is 23:22:10:39.338 for LB1A	LB1ACDC2:187AF200:12:48:	5 RS28		LB1A:LB1ACDC2:187AF200:	1 9/6/2018, 12:56:10
	N				BCS Running O	Out Of Extents	Dataset CATALO	DG.EH.REORG99 is at 123 extent	s out of a maximum of 123.	002107-961 D	FF91	CATALOG.EH.REORG99	9/6/2018, 1:47:41 8
					Catalog Volume	e Free Extent Size Warr	in The largest free	extent on catalog volume TSTSM) is only 210 tracks vs. seconda	a 002107-961 D	FF91	CATALOG.UBS.PROD1	9/6/2018, 1:47:41 8
					Catalog Volume	e Free Extent Size Warr	in The largest free	extent on catalog volume TSTSM	is only 340 tracks vs. seconda	a 002107-961 D	FF91	CATALOG.UBS2.PROD1	9/6/2018, 1:47:41 8
	ł.				Catalog Cache	Hit Ratio Too Low	The catalog ICF	RSPLEX01.EB1F.CATD on RS28	has an average hit ratio of 0.00	RS28		ICF.RSPLEX01.EB1F.CATD	9/6/2018, 9:08:41 F
	3				Db2 Zos Subsys	stem Edm Pages In Us	The EDM Pool i	s 100.00% used on DB2 XC1A on	RS25	RS25		XC1A	9/7/2018, 1:46:22 /
	3				Db2 Zos Subsys	stem Edm Pages In Us	The EDM Pool i	s 100.00% used on DB2 QC1C on	RS25	RS25		QC1C	9/7/2018, 1:46:22 /
	l.				Catalog Cache	Hit Ratio Too Low	The catalog ICF	RSPLEX01.QAX1.CAT1 on RS25	has an average hit ratio of 8.2	3 RS25		ICF.RSPLEX01.QAX1.CAT1	9/7/2018, 2:15:55 /
	3				Db2 Zos Subsys	stem Edm Pages In Us	The EDM Pool i	s 100.00% used on DB2 OCA8 on	RS52	RS52		OCA8	9/7/2018, 7:45:27 /
	3				Logical Volume	Free Extent Size Warn	n; The largest free	extent on logical volume ML1002	of 002107-961 DFF91 is only 2	t 002107-961 D	FF91	ML1002	9/8/2018, 3:25:57 /
	3				Logical Volume	Free Extent Size Warn	n; The largest free	extent on logical volume H1P102	of 002107-961 DFF91 is only 2	\$ 002107-961 D	FF91	H1P102	9/9/2018, 8:28:30 F
	ł				Storage Group R	Projected Available Spi	o In about 0 millise	econds, the Storage Group ARYS	626 in on System RS28 will like	RS28		ARYSG28	9/10/2018, 3:41:51
	1				DB2 Z/OS Three	ad Class 1 Elapsed Wa	m Class-1 Elapsed	Time is 20:03:50:08.287 for LB1A	LB1ACDC1:1981F980:07:09.3	3 RS28		LB1A:LB1ACDC1:1981F980.0	9/10/2018, 7:16:38
	1				DB2 Z/OS Three	ad Class 1 Elapsed Wa	m Class-1 Elapsed	Time is 20:03:50:06.254 for LB1A	LB1ACDC1:1961F3A0:07:09:	3 RS28		LB1A:LB1ACDC1:1981F3A0:	9/10/2018, 7:16:38
	1				DB2 Z/OS Three	ad Class 1 Elapsed Wa	m Class-1 Elapsed	Time is 23:22:10:05.768 for LB1A	LB1ACDC2:180D8BE0:12:49	RS28		LB1A:LB1ACDC2:180D88E0	9/10/2018, 8:11:41
	ł				DB2 Z/OS Three	ad Class 1 Elapsed Wa	rn Class-1 Elapsed	Time is 23:22:10:05.748 for LB1A	LB1ACDC2:1B0D7200:12:49:	RS28		LB1A:LB1ACDC2:180D7200:	19/10/2018, 8:11:41
	3				Logical Volume	Free Extent Size Warn	n; The largest free	extent on logical volume F2P10D	of 002107-961 DFF91 is only 2	8 002107-961 D	FF91	F2P10D	9/10/2018, 8:43:30
	3				Logical Volume	Free Extent Size Warn	n, The largest free	extent on logical volume F2P104	f 002107-961 DFF91 is only 1	0 002107-961 D	FF91	F2P104	9/10/2018, 8:43:30
	3				Logical Volume	Free Extent Size Warn	n The largest free	extent on logical volume F2P108	f 002107-981 DFF91 is only 1	1 002107-961 D	FF91	F2P108	9/10/2018, 8:43:30
	3				Logical Volume	Free Extent Size Warn	n The largest free	extent on logical volume F2P10A	of 002107-961 DFF91 is only 1	8 002107-961 D	FF91	F2P10A	9/10/2018, 8:43:30
	3				Logical Volume	Free Extent Size Warn	n; The largest free	extent on logical volume F2P106	f 002107-961 DFF91 is only 2	3 002107-961 D	FF91	F2P108	9/10/2018, 8:43:30

.

....

Critical Events and Message Log

.

.

Rocket

Alerting through email, z/OS operator commands, SNMP, and WTO

Rocket Mainstar.		Logged in as: TS5778 Help	p Logout About
Home Message	e Boards Dashboards I	MXI Commands Configuration 🗸 Tools 🗸	
System Configuration	🗸 🖂 🙃 🙆 🔏 🗈 🕄		សា
Actions	C Directory Antion		
Scopes	B Server-based Actions	Action Group: Server-based Actions	۲
Responses	ZTEAM EmailAction DB2 storage	Subject Type: AddressSpace	T
Custom Launch	Address space Virginia	Event Type: AddressspaceUpublisy Related Event Type: Coones	¥
Moniton Ng	🛃 Alex Email	Readed Event Type:	
Monitoring Overrides	🗲 cancel	To: knjenga@rs.com	
A Monitored Information Types	Copy of SampleEmailAction	From: mxi02@rs.com	
Correlations	copy of Virginia DB2 Thread email	Cc	
Action Schedules		Boci	
	DATAWI M1 EmailAction	Subject: S{event.type} was S{trigger} on S{device.bestName} for S{subject.bestName}	
	DCollect Master Task	Drimary SMTD Backup SMTD	
	DCollect TSO Task	ennary serve backap serve	
	demo EmailAction	SMTP Host: smtp.rocketsoftware.com	
	🐓 DisNew SMS Volume	SMTP Usemame:	
	🖋 Enable SMS Volume	SMTP Password: Set Password SMTP Port: Use SSL:	
	🖋 Example		
	example client action	File Attachment:	
	ExampleAuxEmail	Message:	
	ugeres EmailAction	AddressSpace : \${subject.bestName}	A
	GGC Email/ction	AverageCPU : \${event.averageCPUPercent}	
	A Jorie D.M.CPU	System: (/device hestName)	
	Joris EmailAction	Event Type: \${event.type}	
	MQ event EmailAction	Time: \${event.datetime}	
	MQQ Depth	Trigger: \${trigger}	•
	MXI Agent or System EmailAction	Message: \${event.message}	
	🙀 Ray Email	(*) Bold font denotes a required field	
	rpenny EmailAction		
	rpenny EmailAction 2		
	rpenny Ipar EmailAction 2		
	SampleEmailAction		
	Shari		
	SNMP v2 /ueft Clear		
	SNMP v2 Clear to wal-d-m03		
	SNMP v2 Clear to wal-ym-neure02		
	SNMP v2 Clear to wal-vm-netcure02		
	SNMP v2 Notification to wal-d-rp03	▼	
	-		

.



Catalog Recovery Plus



Your data requires 24x7 access

A large percentage of your data may be cataloged in as few as 2-3 catalogs

ICF catalogs are a single point of failure

Comply with government or industry regulations

Support business resiliency initiatives

An unplanned outage or catastrophic failure can result in significant impact for critical applications





Protects access to data

Rocket

Things go bump in the night ...

- Volumes fail and have to be restored
- Catalogs (BCSs and VVDSs) become corrupted and have to be restored
- Data sets become uncataloged, don't ever get cataloged, or are cataloged to the wrong catalog
- Data sets are cataloged, but don't exist
- CAS or caching problems





- Protect against loss of access to data
- Reduce risk of Failure
- Reduce recovery time
- Simplify Forward Recovery
- >Avoid application outages
- Improve productivity through ease of use and enhanced functionality





Top Features

- Backup and Recovery
 - > Provides safe, reliable and easy ICF Catalog backup and reduce recovery time.
- Diagnose and Tape Audit
 - Maintains 100% catalog structural integrity.
- Reorg and MERGECAT While-Open
 - > Avoids application outages, due to scheduled catalog maintenance activities.
- Explore and Report
 - Powerful, high performance search across catalogs or volumes to identify and report on virtually any dataset attribute.

> CATSCRUB

Provides the fastest and accurate ICF catalogs and DASD data set synchronization enabling rapid application availability for disaster recovery operation.



Top Features

- LIST and Map
 - Provides flexible options to extract or print from SMF and ENQ data.
 - Map internal data structure of any KSDS files. It provides error warning and recommendation for tuning.
- SUPERCLIP
 - Changes a VOLSER and Synchronize all BCS and VVDS entries to new VOLSER. It is fast and without requires to unload and reload the data from the volume.
- > ALTER
 - > This is a powerful clean-up and repair tool.
- > ZAP

> Allow to view, delete and make AMASPZAP-like updates.



Performance Essential





Batch processing benefits

- Improve VSAM and Non-VSAM Performance
- Helps reduce EXCP counts, CPU time, and elapsed time
- Exploits VSAM LSR and NSR buffering for application programs transparently

> Application Performance Analyzer (APA)

- Performance Essential offers modeling capabilities that predict system behavior based on Performance Essential
- Low- overhead tool that finds high activity candidates using SMF data

Why is Optimization of I/O Important?



Growth and batch processing window constraints

- Business needs out of alignment with application design
- Data center consolidations
- Extending business without the need to upgrade systems



⁵⁵ Why is Optimization of I/O Important?





We're predicting, conservatively, cost savings of US \$6.6 million across our environment over five years using Performance Essential, through a reduction in elapsed time and in CPU cycles running VSAM and sequential data batch processing.

> - IT director, Fortune 100 financial institution

I/O Without Using Performance Essential





- Inefficient I/O operations
- Relying on system defaults
- Improper tuning

.

.

Lack of flexibility when change is required from sequential to random access (or vice versa)

Low performance

System is not utilized to its maximum capacity

I/O Using Performance Essential

.

.







Modernization and Mobilization



BlueZone	LegaSuite		API	
		Web	Reinvent the user	Reinvent the user experience and
Transformed	Web	transformation with workflow	of your existing code	codebase
emulation	transformation	Improvements	Evaluate	 Redesign your application
 Extend green-screen applications to display on PCs or 	 Improve navigation look-and-feel without changing workflow 	experience within a primary application	modernization of front-end functionality and screens vs. back office functions.	using APIs to leverage functionality from host-based applications
mobile devices			 New user interface for web and mobile 	 Move to other platforms over time
Touch up the walls	Paint walls, add new flooring & furniture	Update several rooms & tear down interior wall for improved traffic flow	Complete interior redesign with smart, eco-friendly features	Tear down and rebuild



BlueZone Web





What is BlueZone Web?

- Terminal Emulator designed to communicate with today's most popular host systems
- Written entirely in JavaScript and HTML5
- Works with modern web browsers
- Runs on PC's, tablets or just about any mobile device regardless of the client OS
- No software is installed on the client device.
- Can be installed on any platform that supports Node.js

202 (P	1	ilueZor	ie Web								8:01 A1					R5221	WordS#1			• 0		÷
A	l≁ (enu	eع الل	2 160	×	نہ 02	el npi	A lers	ď	5 pti	#a	mi. St	atus	ma ∐€	#U	PT16	H10	1923	(HTD)	H11	1923	Q	
01 234 56 78 910 11 D	Set Vie Edi Uti Bat Com Dia LM IBM SCL Worl DB2 TBM	ting w t liti liti log Faci Pro M kpla	s es und Test lity duct ce	5	Term Disp Crea Perf Inte Subm Ente Perf Libr IBM SW C ISPF DB2 IBM	ina lay te orm rac it r T orm pro orm Pro Pro	l ar sou or c tive job SO c dia adm igur igur igur igur igur	toproverse	Pr ser da ge fingu la vork te str. velo on l tion	par par ta c sour unct age ngua stat stat stat stat ngua stat	ame or 1 ce o ion pro age o ion fui ary ary arkp	ters isti data cess com ncti prod Man lace	n Me ing essi mand ons ucts ager	ng		< Su 15 22 29 Tii Da	Oct Mo 2 9 16 23 30 me y of	cale ober Tu v 3 10 1 17 1 24 2 31 yea	enda ve T 4 11 12 19 5 20	2017 5 6 2 13 9 20 5 27 : 01	> Sa 7 14 21 28 :43 291	
to T	-SUS 121	R I	17	3	4	4	F3 	FE.	1		H +	75 8	1	0	÷11	j Bo	12 p	Pri Sci	12 PC	Sert Loc Han	Pa fire Pg Up	
	SMR	•	4	x		q Y	•	6	J	ł	m		9			Enter Shi		Del	-	End.	Pg Do	-
																						_

Rocket BlueZone Web Architecture

....



- JavaScript
- JSON
- HTML5
- CSS3

.

- iOS, Android, Linux, ...
- Chrome, Firefox, Edge, Safari, ...
- No Java, no ActiveX, no browser plugins



1

© 2018 Rocket Software Inc. All rights reserved.

.



Legasuite Web and Rocket API



Repurpose Enterprise Applications as Web Apps

Go from these: To this:

Reputer 1	Control of
GATH, BOLKS POIDS Address Back Address Addres	Identify Sec. 9 (1995) Avrides International Sec. Variations International Sec. Variations International Sec. 1997 International Sec. 1997 International Concession International Concession Inte
NUT	olos, inc. (20 0409011 10 11 Autoin posicion

	Annual Party	a Million I					
to be a second	(+INTA)		1 Contest	-			
				111.11	1111	uullil.	flutton
The local diversion of	-		-	-			
	il int			1111			

	The same	The Arrange
		0-0-8-
151	AGULE	
	Burranse and a second	-
1	CALL STREET, ST	COLUMN TWO IS NOT
	Auder 2001-0148, 000-019 August has 1	1 10
	Traje Farm	
	They be the Montellings of the Workson of	1.00
-	Andrea (A.A. Bancher (1982) Secondo (1982) (1911) Secondo (A. Bendler (1992) Secondo (1992) (1993) Sachulosi (A. Accellos (1983) Secondo (1993) (1911)	
	Andrew Processing on the state of the state	
	And a state of the second	
1		
	and the second design of the second s	

IMI 125 Sens	PHYOMOTICIN
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
	\$18.90/da
	Contraction of the
	See require)
manager and antisect. Address: any rates	maateri
And address of the second	antes
Trade and a second statement	ande:
And Annual Contraction Contraction	and t
Andrewski Andrewski Andrewski Andrewski Andrewski Andrewski Andrewski Andrewski Andrewski Andrewski Andrewski Andrewski An	

Features

- Repurpose host applications as HTML5 applications in weeks
- Make your enterprise apps accessible via any browser
- Zero-footprint deployment eliminates desktop application maintenance
- Combine with any third-party web library and API (jQuery, Google Maps, SalesForce)
- Embed parts of your application in web portals

© 2016 Rocket Software Inc. All rights reserved.

Rocket

Enable the Latest Technology to Meet Business Needs!

.



© 2018 Rocket Software Inc. All rights reserved.

Rocket

Rocket API Architecture

.

.

.





.

.

.

© 2016 Rocket Software Inc. All rights reserved.

.

Optimized WorkFlows with Easily Manage Connections

LegaSuite Workbench GUI helps connect green screens to modern UI via a drag & drop environment with maximum flexibility.



LegaSuite Web, in conjunction with Rocket API, provides ease of use connection to multiple enterprise applications



Figure 2: LegaSuite Web, working in conjunction with Rocket API, lets you easily manage connections between multiple enterprise applications and modernized user interfaces.

© 2018 Rocket Software Inc. All rights reserved.

KRocket





DR/Xpert



- Identify all your critical data effectively and in a timely manner
- > Automatically recover to a select recovery date
- Prioritize your application recovery to meet your SLA
- Secure your backups automatically with encryption
- Achieve corporate audit and compliance objectives.
- Recover critical data in a quick, efficient manner.
- Recognize volumes that are mirrored
- Recall migrated critical datasets

Groups or segregates data based on predetermined filter criteria

Monitor changes to the critical data list continuously and ensures that it is always up-to-date

Include critical tape data in the backup

Integrate dynamically with the job scheduling

٠



Rocket



Drill down through your application, jobs, and datasets using a standard browser.

Quickly identify critical data and the reason it is critical.

Validate your recovery objectives using the Recovery Simulator.

.

•





DASD Backup and Recovery



DASD Backup Supervisor - (DBS)

- DBS Creates full volume physical backups
- >Auto-discovery of changes in the environment
- Based on rules auto adjust to accommodate changes
- Comprehensive audit reporting to document changes



^{*}DASD Backup Supervisor - Benefits

- Through automation DBS improves the integrity of customer backups
- DBS will exploit high density tape for DASD backups
 - Balance based on number of tape drives available
 - Select the percent full to fill the tapes
 - Select the number of DASD volumes to stack on each tape
 - Native JCL only allows 255 jobs steps per job
 - > DBS is a one step job so the only limit on stacking is the tape size
- Provides freedom from the manual process of creating backup/restore JCL



DASD Backup Supervisor - Benefits

Automate building of backup and restore JCL

- Supports DFSMSdss and FDR
- Little to no user intervention for local or recovery site

Audit DASD volumes

- New volumes
- Missing volumes
- Changed volumes
- Audits DASD configuration at the DR site
- Ensures that you have enough DASD contracted for the DR site

Easily adjusted at recovery site to support resource changes

PARMLIB member update to reflect the new DASD addresses


Enhanced Features

- Automated "Point in Time" recovery support
 Flash Copy, Time Finder, and Shadow Image
- Local dataset recovery from Full Volume Physical Back-ups
- Enhanced Large Tape Support
- Duplex copies (up to 4- DFSMSdss concurrently)
- Storage Group Support
- Progress Monitor Reporting
- DR/Xpert interface
- ISPF panel interface

© 2018 Rocket Software Inc. All rights reserved.



How Does DBS Work?



- A batch job identifies any changes and makes updates.
- The Back-up JCL is created.
- Execution of the backup JCL builds the stacked backup tapes.
- The RESTORE step generates restore JCL and recovery Utility.
- The Restore JCL is shipped offsite with full volume backup tapes.

© 2016 Rocket Software Inc. All rights reserved.



Discussion

IT'S NOT ROCKET SCIENCE. IT'S ROCKET SOFTWARE.