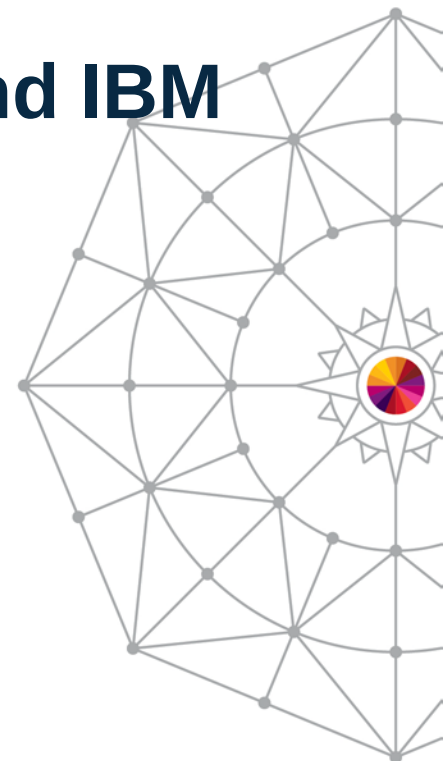


Product Integration news: Tivoli Workload Scheduler (TWSz) and IBM Tivoli Output Manager (ITOM)

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Rocket Software

August 2014



#SHAReorg



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TWSz v9.2 and ITOM v3.1 Integration

- With TWSz v9.2 and ITOM v3.1, customers have direct access to any job log for any input arrival.
- Jobs no longer need to be on the current plan in order to view them.
- This session focuses on the implementation and benefits of this new capability.

The Elevator Pitch

- In response to customer requests, TWSz version 9.2 provides direct integration with Tivoli's solution for job log archival and report management system: IBM Tivoli Output Manager for z/OS (ITOM).
- ITOM provides workload automation personnel with immediate access to job logs regardless of when or where the job ran and provides the ability to analyze historical information about job execution times and exceptions.
- Additionally, ITOM provides decision makers with direct access to production business reports via web browser, email, and hardcopy.
- ITOM is often selected to replace existing third party report management systems by companies who need to reduce software cost and the number of vendors that they have to deal with.
- Integration between TWSz and ITOM illustrates our commitment to improve the productivity of your IT organization.

Three Key Messages

- Save money
 - Every shop has a report management product
 - Replace ISV products with solutions from IBM
- Improve productivity
 - Provide direct access to production job logs
 - View job logs and reports through your web browser
- Increase automation reach
 - Automatic scanning for site-defined exceptions
 - Issue WTO messages; highlight text; update Archive Name or Condition Code



Three Key Questions

- How do you manage and access job logs today?
- What percent of your TWS jobs are zCentric?
- As it relates to job logs and job execution metrics, what other data would make your life easier and more productive?



Value Statements

- Retain job logs for any length of time
- Access more than just JES data sets
- Record output from distributed jobs
- Online viewing via web browser of TSO/ISPF
- Compare and contrast historical run times and previous exceptions



Get the Complete Picture

- TWS knows what will run
- TOM knows what did run
- TWS users go directly into TOM to view job logs
- TOM collects job logs and retains them as long as you like



Opportunities for a Smaller Footprint

- Operates with or without the data store
 - Simplifies configuration
 - Reduces house-keeping
- No need for multiple copies of job log DDs
- Output stored in SMS-managed data sets
 - Production data managed like all other production data
 - DFSMS* management, storage, and data classes
 - Lifecycle management provided by DFSMSHsm*
 - Data access managed by RACF*



* or plug-compatible offering

Code Levels

- This solution is based on the following product versions
 - Tivoli Workload Scheduler v9.2
 - Tivoli Output Manager v3.1
- Everything comes “out of the box” – no additional software to acquire, install, and maintain

Tivoli Output Manager

“iTOM”



Visibility.

Answer business questions when, where, and how you need to.

- Mobile device online viewing
- View, download, and print through your web browser
- Email – access report content as soon as it is available
- PDF, CSV, AFP, text

Control.

Leverage your existing z/OS investment.

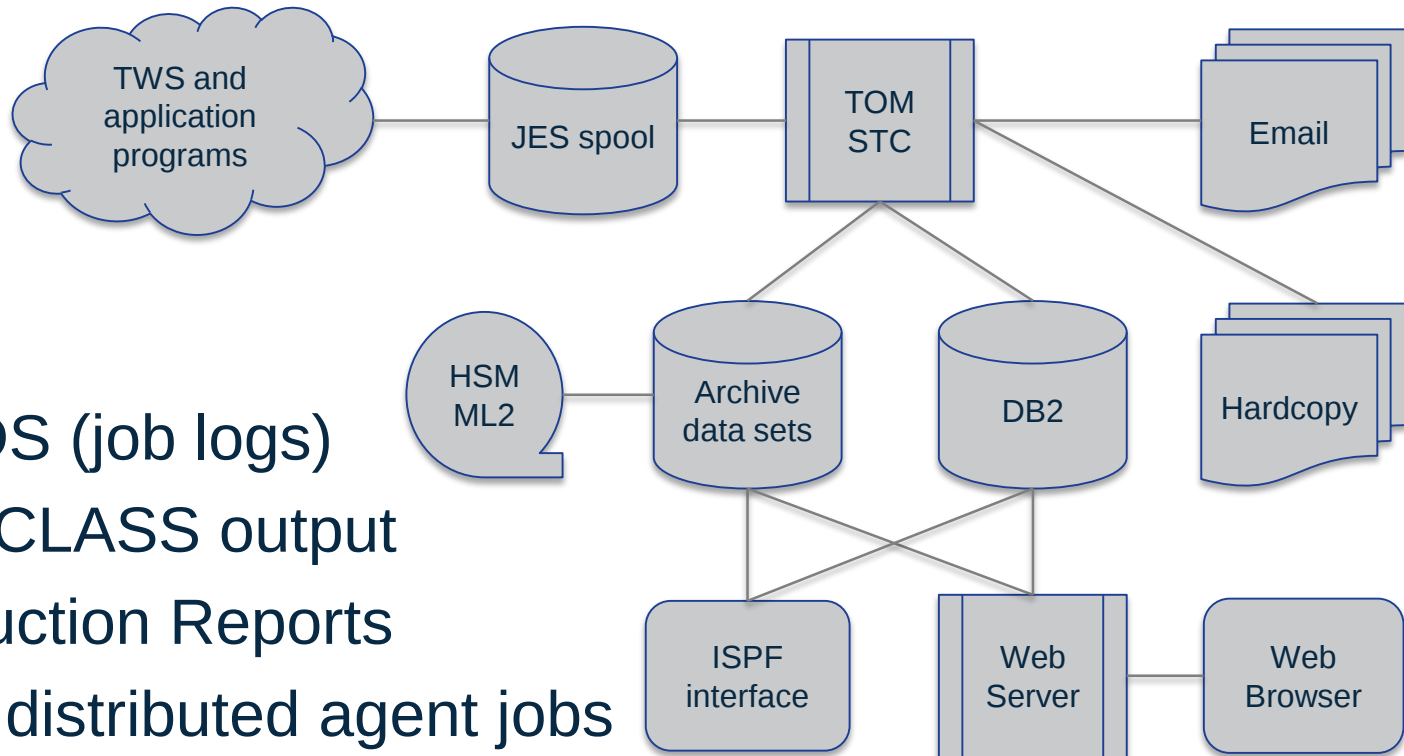
- Reliable, scalable, and secure
- DB2 metadata repository
- SMS-managed report content
- HSM*-managed data lifecycle
- RACF*-based access control

Automation.

Automatically distribute reports to decision makers.

- Process report content from local or remote systems
- Notification and delivery via email
- Highlight content-specific exceptions
- Integration with corporate portal via RESTful web service

ITOM Architecture

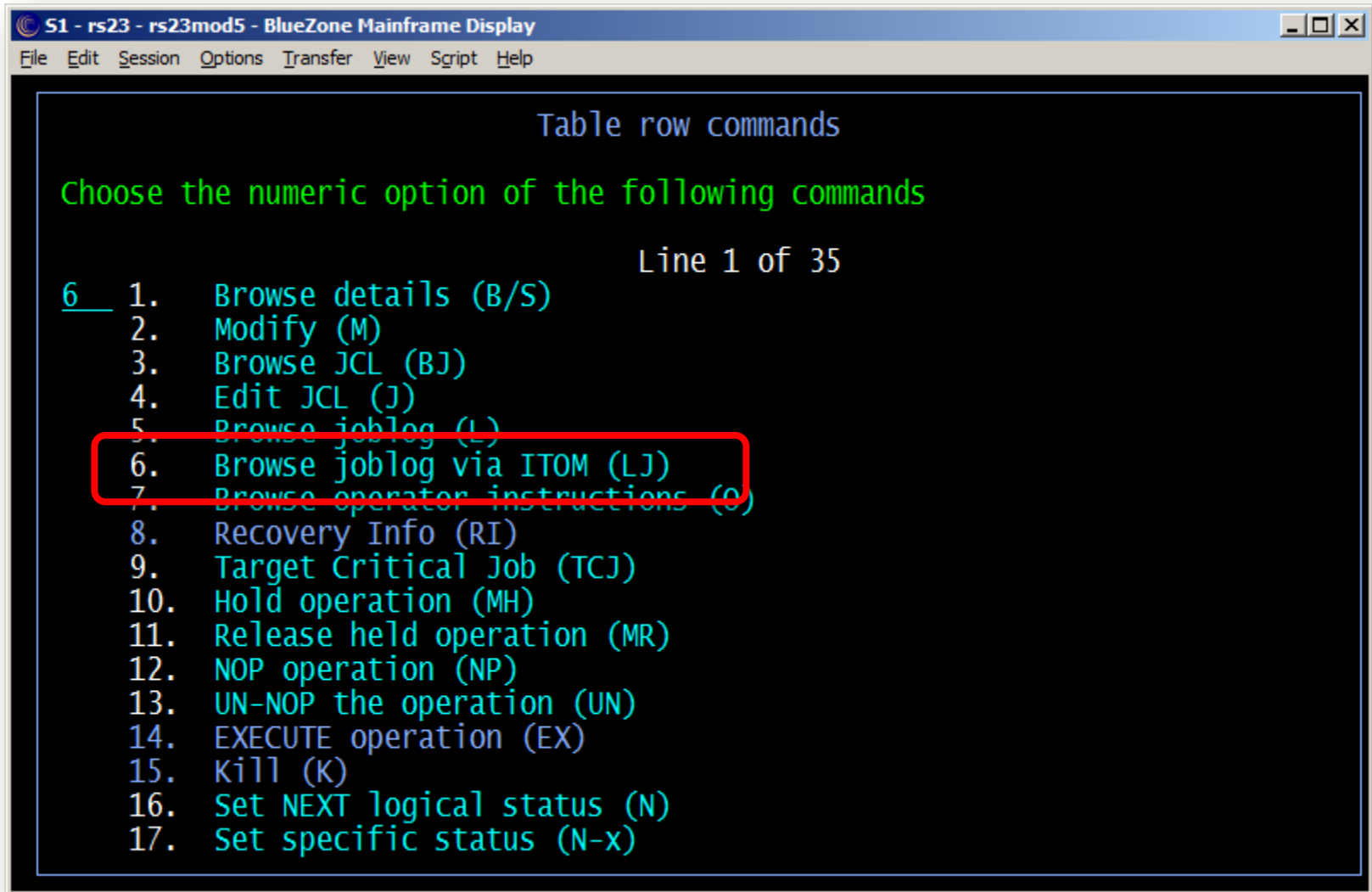


- JESDS (job logs)
- MSGCLASS output
- Production Reports
- TWS distributed agent jobs
- JES spool local or remote systems (MAS, NJE)

Terms Used

- Archive name
 - A string of thirty-two characters used to assign a friendly name to sysout stored in ITOM
- Instance
 - A unique combination of TWS Application ID, Operation Number and Input Arrival
- Job logs
 - The JES data sets (JESDS) and MSGCLASS output produced by a job
- Business Reports
 - Capture, archive, index, and distribute production reports. Online viewing through web browser or TSO/ISPF

TWSz v9.2 “LJ” line command



```
S1 - rs23 - rs23mod5 - BlueZone Mainframe Display
File Edit Session Options Transfer View Script Help

Table row commands

Choose the numeric option of the following commands

Line 1 of 35

6_ 1. Browse details (B/S)
    2. Modify (M)
    3. Browse JCL (BJ)
    4. Edit JCL (J)
    5. Browse joblog (L)
    6. Browse joblog via ITOM (LJ)
    7. Browse operator instructions (O)
    8. Recovery Info (RI)
    9. Target Critical Job (TCJ)
   10. Hold operation (MH)
   11. Release held operation (MR)
   12. NOP operation (NP)
   13. UN-NOP the operation (UN)
   14. EXECUTE operation (EX)
   15. Kill (K)
   16. Set NEXT logical status (N)
   17. Set specific status (N-x)
```

“LJ” for a specific instance

S1 - rs23 - rs23mod5 - BlueZone Mainframe Display

File Edit Session Options Transfer View Script Help

Action View Help

OPERATIONS IN THE CURRENT PLAN

Command ==> _____ Scroll ==> CSR

View: Compact (EQQMOPRT) Row 1 of 8 >>

Row	Application	ID	Operation	Input	Arrival	Dep	Cond	Dep	SXU
cmd			WS No. Jobname	Date	Time	Suc Pre	Suc Pre		
—	DEVELOPMENT		ITOM 120 TWSDV020	14/03/14	11.59	2 0	0 0		C N
—	DEVELOPMENT		ITOM 122 TWSDV022	14/03/14	11.59	1 1	0 0		C N
—	DEVELOPMENT		ITOM 123 TWSDV023	14/03/14	11.59	1 2	0 0		C N
<u>LJ</u>	DEVELOPMENT		ITOM 127 TWSDV027	14/03/14	11.59	0 1	0 0		C N
—	DEVELOPMENT		ITOM 120 TWSDV020	14/03/14	10.14	2 0	0 0		C N
—	DEVELOPMENT		ITOM 122 TWSDV022	14/03/14	10.14	1 1	0 0		C N
—	DEVELOPMENT		ITOM 123 TWSDV023	14/03/14	10.14	1 2	0 0		C N
—	DEVELOPMENT		ITOM 127 TWSDV027	14/03/14	10.14	0 1	0 0		C N

***** end of data *****

Application ID = DEVELOPMENT

Operation No. = 127

Input Arrival = 14/03/14 11.59

Popup window automatically populated

S1 - rs23 - rs23mod5 - BlueZone Mainframe Display

File Edit Session Options Transfer View Script Help

File Help

IBM Tivoli Output Manager - Search for Archived Sysouts

C Command ==> _____ 11 ==> CSR

P

Job Name . . . _____

Sysout Class . . . _____

Archive Name . . . DEVELOPMENT 127 1403141159

User ID _____

Exceptions . . . _____ (Yes, No, or blank)

After Date . . . _____ (YYYY/MM/DD, Today, T-nnnn)

Before Date . . . _____ (YYYY/MM/DD, Today, T-nnnn)

After Time . . . _____ (HH:MM:SS)

Before Time . . . _____ (HH:MM:SS)

ase BJT.**

/OM

Archive Name = DEVELOPMENT 127 1403141159

Application ID = DEVELOPMENT

Operation No. = 127

Input Arrival = 14/03/14 11.59

Additional search criteria

S1 - rs23 - rs23mod5 - BlueZone Mainframe Display

File Edit Session Options Transfer View Script Help

File Help

— IBM Tivoli Output Manager - Search for Archived Sysouts —

C Command ==> _____ 11 ==> CSR

P

Job Name . . . _____

Sysout Class . . . _____

Archive Name . . . DEVELOPMENT 127*

User ID _____

Exceptions . . . _____ (Yes, No, or blank)

After Date . . . _____ (YYYY/MM/DD, Today, T-nnnn)

Before Date . . . _____ (YYYY/MM/DD, Today, T-nnnn)

After Time . . . _____ (HH:MM:SS)

Before Time . . . _____ (HH:MM:SS)

ase
BJT.**
/OM

You can search based on a variety of attributes.
Specify “Yes” if you are only interested in seeing
ABENDs, JCL errors, bad COND CODE.

All history for “DEVELOPMENT 127”

S1 - rs23 - rs23mod5 - BlueZone Mainframe Display

File Edit Session Options Transfer View Script Help

File Options Search Help

IBM Tivoli Output Manager - Archived Sysouts

Command ==>

Cmd	Archive name	Cond	Job name	Job ID	Archive Time	Step name
DEVELOPMENT 127	1402101352		TWSDV027	J0760159	2014 02/10 13:53:46	JES2
DEVELOPMENT 127	1402101347		TWSDV027	J0760129	2014 02/10 13:50:02	JES2
DEVELOPMENT 127	1402101342		TWSDV027	J0760118	2014 02/10 13:46:49	JES2
DEVELOPMENT 127	1402101336		TWSDV027	J0760060	2014 02/10 13:39:01	JES2
DEVELOPMENT 127	1402101326		TWSDV027	J0759988	2014 02/10 13:27:10	JES2
DEVELOPMENT 127	1402071023		TWSDV027	J0734262	2014 02/07 10:24:06	JES2
DEVELOPMENT 127	1402070956		TWSDV027	J0734045	2014 02/07 09:56:45	JES2
DEVELOPMENT 127	1402061258		TWSDV027	J0717742	2014 02/06 12:58:36	JES2
DEVELOPMENT 127	1402051246		TWSDV027	J0700743	2014 02/05 12:46:36	JES2
DEVELOPMENT 127	1402051007		TWSDV027	J0699641	2014 02/05 10:10:06	JES2
DEVELOPMENT 127	1402051007	0127	TWSDV027	J0699630	2014 02/05 10:08:14	JES2
DEVELOPMENT 127	1402051005	S322	TWSDV027	J0699615	2014 02/05 10:06:20	JES2
DEVELOPMENT 127	1402051004	S322	TWSDV027	J0699608	2014 02/05 10:05:15	JES2
DEVELOPMENT 127	1402051001	S322	TWSDV027	J0699587	2014 02/05 10:01:49	JES2
DEVELOPMENT 127	1402050956	SEC6	TWSDV027	J0699556	2014 02/05 09:56:28	JES2
DEVELOPMENT 127	1402041429		TWSDV027	J0681431	2014 02/04 14:30:08	JES2
DEVELOPMENT 127	1402041419		TWSDV027	J0681115	2014 02/04 14:20:19	JES2

You can list and view job logs that were generated days, months, or even years ago.

JESDS plus other sysouts

```

S1 - rs23 - rs23mod5 - BlueZone Mainframe Display
File Edit Session Options Transfer View Script Help
File Options Search Help

IBM Tivoli Output Manager - Archived Sysouts

Command ==>
System name RS23 Job name TWSDV027 Job Id J0760159 Termination

Cmd DDNAME StepName ProcStep DSID Dest Page Count Line Count C Mig
___ JESMSG LG JES2 D0000002 BOSTON 1 36 Q No
___ JESJCL JES2 D0000003 BOSTON 1 86 Q No
___ JESYSMSG JES2 D0000004 BOSTON 1 259 Q No
___ SYSPRINT STEP010 GPROC D0000101 BOSTON 1 3 Q No
___ SYSUT2 STEP010 GPROC D0000102 BOSTON 71 3643 Q No
___ SYSPRINT STEP015 GPROC D0000103 BOSTON 1 4 Q No
___ SYSUT2 STEP015 GPROC D0000104 BOSTON 1 1109 Q No
___ SYSTSPRT STEP020 IPROC D0000106 BOSTON 1 1 Q No
___ SYSTSPRT STEP025 IPROC D0000108 BOSTON 1 1 Q No
***** Bottom of Data *****

```

“?” line command shows the individual sysout DDs associated with this job.

Note: You are not limited to JESDS, problem analysis often requires viewing of SYSPRINT and other sysout data sets

Limiting search to exceptions

S1 - rs23 - rs23mod5 - BlueZone Mainframe Display

File Edit Session Options Transfer View Script Help

File Help

— IBM Tivoli Output Manager - Search for Archived Sysouts —

C Command ==> _____ 11 ==> CSR

P

Job Name . . . _____

Sysout Class . . . _____

Archive Name . . . DEV*

User ID _____

Exceptions . . . Yes (Yes, No, or blank)

After Date . . . _____ (YYYY/MM/DD, Today, T-nnnn)

Before Date . . . _____ (YYYY/MM/DD, Today, T-nnnn)

After Time . . . _____ (HH:MM:SS)

Before Time . . . _____ (HH:MM:SS)

Save Criteria? No (Yes/No)

ase
BJT.**
/OM

Another example: “Show me all exceptions from any Application having a name beginning with the letters DEV”

Select for viewing

© S1 - rs23 - rs23mod5 - BlueZone Mainframe Display

File Edit Session Options Transfer View Script Help

File Options Search Help

IBM Tivoli Output Manager - Archived Sysouts

Command ==>

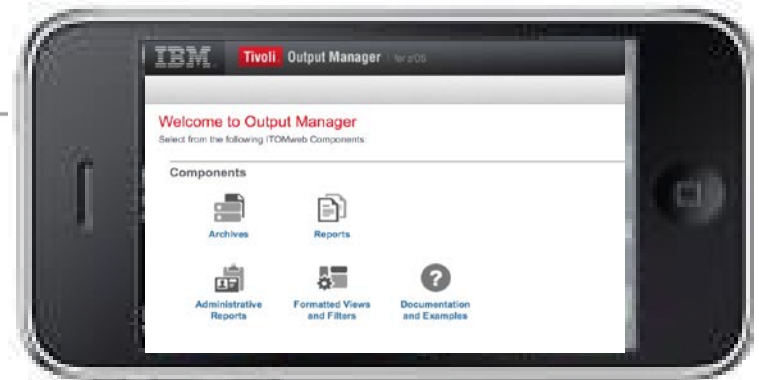
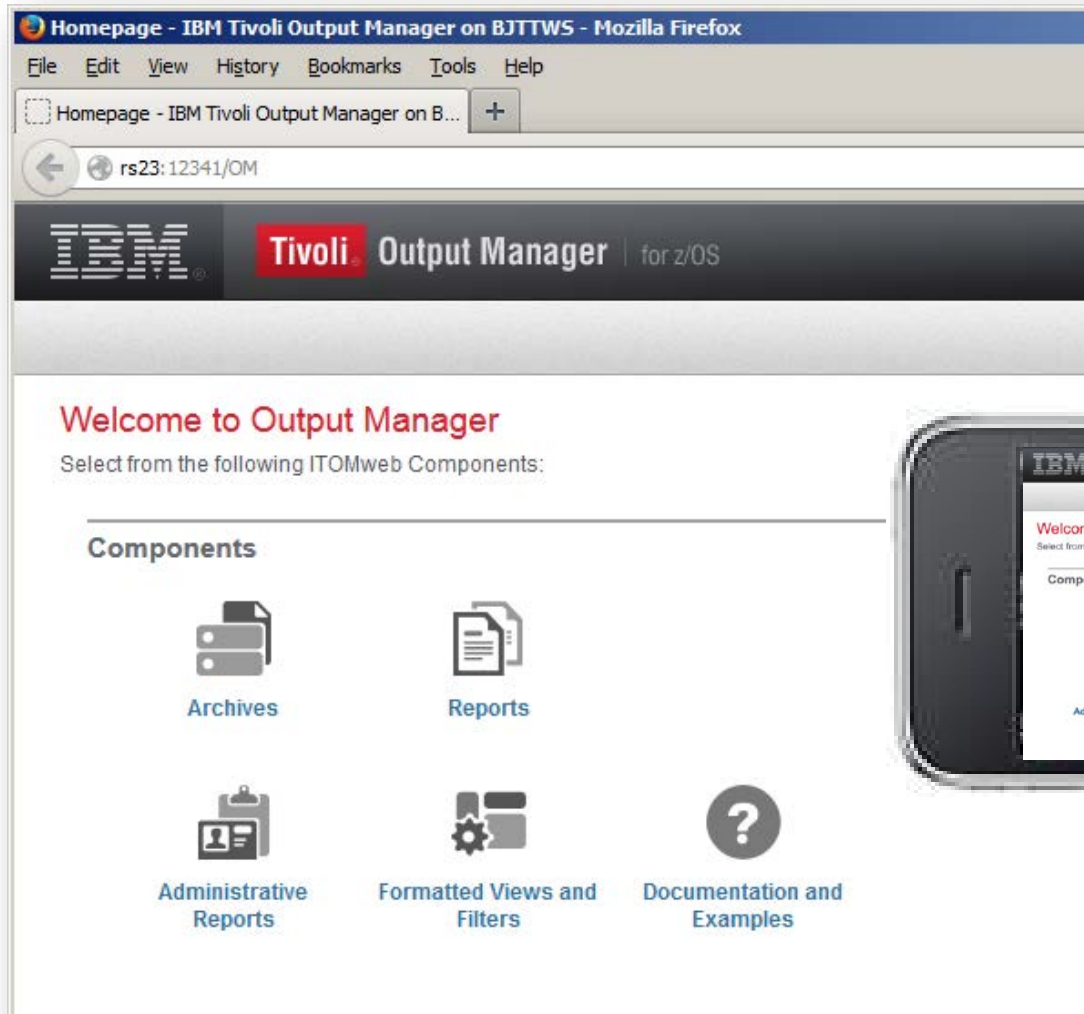
Cmd	Archive name	Cond	Job name	Job ID	Archive Time	Step name
___	DEVELOPMENT 120 1403141159	0024	TWSDV020	J0218359	2014 03/14 12:07:51	JES2
S	DEVELOPMENT 120 1403141159	S806	TWSDV020	J0218319	2014 03/14 11:59:56	JES2
___	DEVELOPMENT 120 1403141014	0024	TWSDV020	J0217433	2014 03/14 10:15:04	JES2
___	DEVELOPMENT 122 1402261314	0012	TWSDV022	J0987880	2014 02/26 13:18:21	JES2
___	DEVELOPMENT 122 1402261314	JCLERR	TWSDV022	J0987877	2014 02/26 13:16:40	JES2
___	DEVELOPMENT 122 1402261314	JCLERR	TWSDV022	J0987867	2014 02/26 13:14:35	JES2
___	DEVELOPMENT 122 1402251117	JCLERR	TWSDV022	J0965231	2014 02/25 11:20:27	JES2
___	DEVELOPMENT 122 1402251117	JCLERR	TWSDV022	J0965217	2014 02/25 11:17:21	JES2
___	DEVELOPMENT 120 1402251108	0012	TWSDV020	J0965190	2014 02/25 11:12:34	JES2
___	DEVELOPMENT 120 1402251108	0127	TWSDV020	J0965184	2014 02/25 11:10:53	JES2
___	DEVELOPMENT 120 1402251108	S806	TWSDV020	J0965177	2014 02/25 11:08:25	JES2
___	DEVELOPMENT 120 1402231223	0012	TWSDV020	J0920290	2014 02/23 12:30:34	JES2
___	DEVELOPMENT 120 1402231223	0008	TWSDV020	J0920288	2014 02/23 12:30:00	JES2
___	DEVELOPMENT 120 1402231223	0008	TWSDV020	J0920287	2014 02/23 12:30:00	JES2
___	DEVELOPMENT 120 1402231223	0012	TWSDV020	J0920286	2014 02/23 12:27:38	JES2
___	DE				6:29	JES2
___	DE				3:43	JES2
___	DEVELOPMENT 120 1402231216	0012	TWSDV020	J0920274	2014 02/23 12:16:28	JES2
___	DEVELOPMENT 120 1402231211	0127	TWSDV020	J0920268	2014 02/23 12:12:55	JES2
___	DEVELOPMENT 120 1402231211	0012	TWSDV020	J0920267	2014 02/23 12:11:45	JES2
___	DEVELOPMENT 120 1402201442	0012	TWSDV020	J0902009	2014 02/20 14:42:29	JES2

Let's select the most recent 806 ABEND.

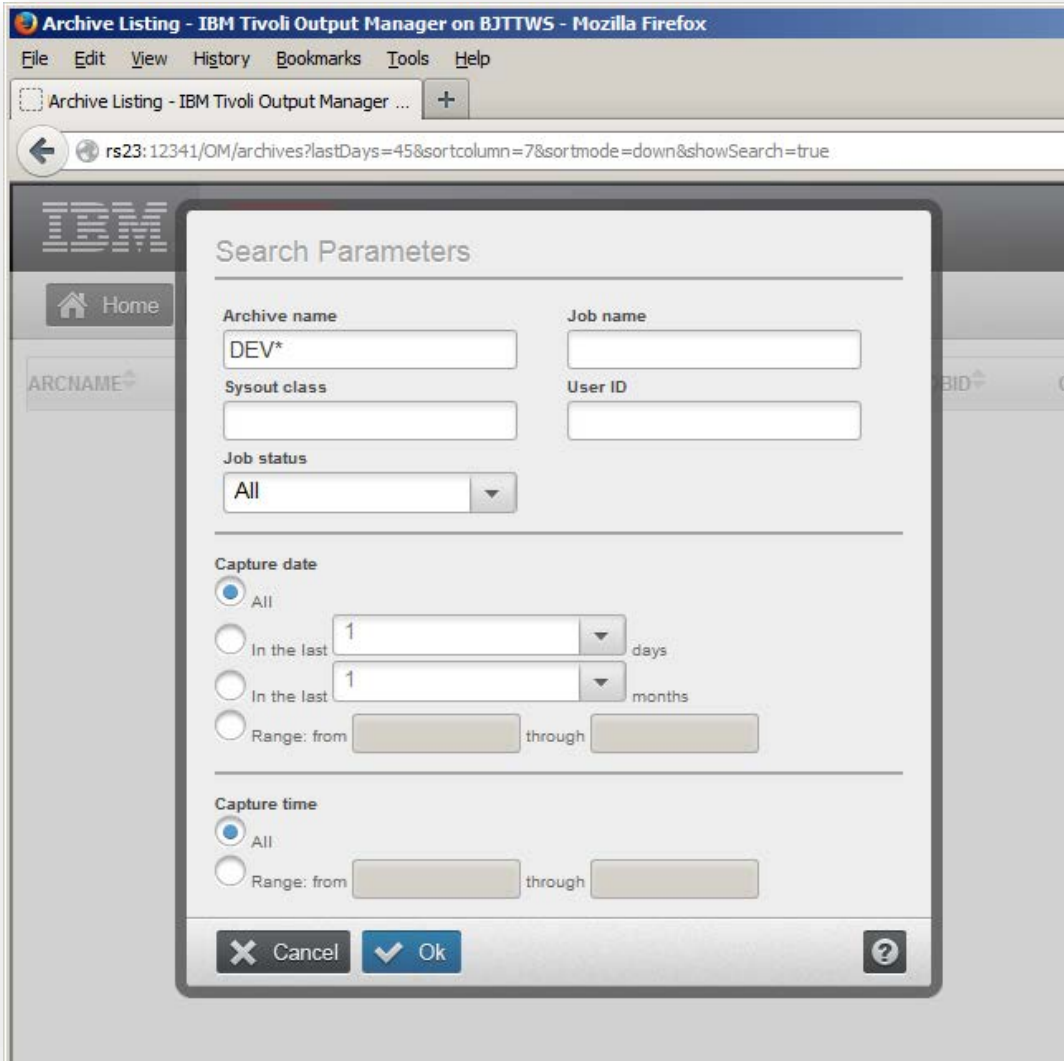
ITOM can automatically highlight strings, substrings, or entire rows when found in the sysout. This example says “if you find IEF450I then highlight that entire record in reverse video red.”

Additionally, ITOM can post WTOs based on text. Perhaps an application program ends with COND CODE 0 but writes “OOPS” to SYSPRINT when there is an error. In this case you can have ITOM post a WTO for automation.

ITOMweb is a base feature



Logon with RACF ID and click search



Archive Listing - IBM Tivoli Output Manager on BJTTWS - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Archive Listing - IBM Tivoli Output Manager ...

rs23:12341/OM/archives?lastDays=45&sortcolumn=7&sortmode=down&showSearch=true

IBM

Home

ARCHNAME

BID

CC

Search Parameters

Archive name: DEV*

Job name:

Sysout class:

User ID:

Job status: All

Capture date:

☒ All

☐ In the last 1 days

☐ In the last 1 months

☐ Range: from through

Capture time:

☒ All

☐ Range: from through

Cancel Ok ?

Note URI – very convenient to bookmark

Archive Listing - IBM Tivoli Output Manager on BJTTWS - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Archive Listing - IBM Tivoli Output Manager ... +

rs23: 12341/OM/archives?arcname=DEV*&sortcolumn=7&sortmode=down

IBM Tivoli Output Manager | for z/OS

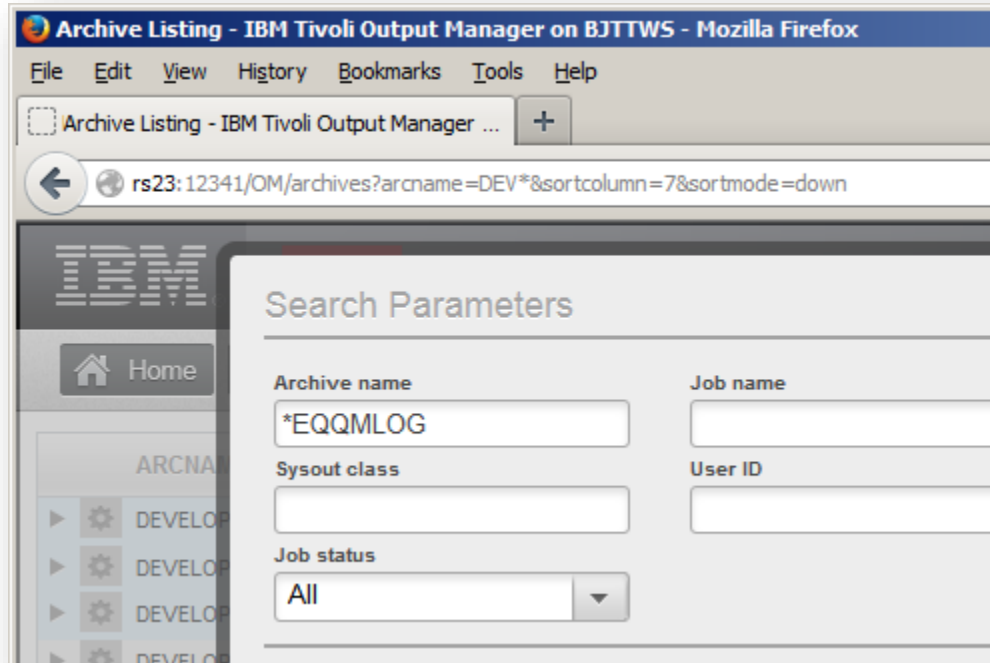
Home Search 511 rows match search criteria. Displaying rows: 1-200

	ARCNAME	ARCHIVE TIME	JOBNAME	CLASS	JOBID	COND. CODE
▶ ⚙	DEVELOPMENT 127 1403141159	2014-03-14-14.24.37	TWSDV027	Q	J0218840	
▶ ⚙	DEVELOPMENT 122 1403141159	2014-03-14-14.24.30	TWSDV022	Q	J0218837	
▶ ⚙	DEVELOPMENT 123 1403141159	2014-03-14-14.24.30	TWSDV023	Q	J0218838	
▶ ⚙	DEVELOPMENT 120 1403141159	2014-03-14-14.24.30	TWSDV020	Q	J0218836	
▶ ⚙	DEVELOPMENT 120 1403141159	2014-03-14-12.07.51	TWSDV020	Q	J0218359	0024
▶ ⚙	DEVELOPMENT 127 1403141014	2014-03-14-12.00.55	TWSDV027	Q	J0218331	
▶ ⚙	DEVELOPMENT 123 1403141014	2014-03-14-12.00.49	TWSDV023	Q	J0218330	
▶ ⚙	DEVELOPMENT 122 1403141014	2014-03-14-12.00.48	TWSDV022	Q	J0218329	
▶ ⚙	DEVELOPMENT 120 1403141014	2014-03-14-12.00.41	TWSDV020	Q	J0218328	
▶ ⚙	DEVELOPMENT 120 1403141159	2014-03-14-11.59.56	TWSDV020	Q	J0218319	S806

The “▶” tool equates to “?” in ISPF

▶	DEVELOPMENT 120 1403141159	2014-03-14-12.07.51	TWSDV020	Q	J0218359					
▼	DEVELOPMENT 127 1403141014	2014-03-14-12.00.55	TWSDV027	Q	J0218331					
	DDNAME ⬆	STEPNAME ⬆	DSID ⬆	CLASS ⬆	DEST	WRITER	FORM	PAGES ⬆	LINES ⬆	CR
	JESMSG LG	JES2	D0000002	Q	BOSTON		STD	1	36	201
	JESJCL	JES2	D0000003	Q	BOSTON		STD	1	86	201
	JESYSMSG	JES2	D0000004	Q	BOSTON		STD	1	259	201
	SYS SPRINT	STEP010	D0000101	Q	BOSTON		STD	1	3	201
	SYSUT2	STEP010	D0000102	Q	BOSTON		STD	71	3643	201
	SYS SPRINT	STEP015	D0000103	Q	BOSTON		STD	1	4	201
	SYSUT2	STEP015	D0000104	Q	BOSTON		STD	1	1109	201
	SYSTSPRT	STEP020	D0000106	Q	BOSTON		STD	1	1	201
	SYSTSPRT	STEP025	D0000108	Q	BOSTON		STD	1	1	201
▶	DEVELOPMENT 123 1403141014	2014-03-14-12.00.49	TWSDV023	Q	J0218330					
▶	DEVELOPMENT 123 1403141014	2014-03-14-12.00.49	TWSDV023	Q	J0218330					

List all *EQQMLOG sysouts



Archive Listing - IBM Tivoli Output Manager on BJTTWS - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Archive Listing - IBM Tivoli Output Manager ...

rs23: 12341/OM/archives?arcname=DEV*&sortcolumn=7&sortmode=down

IBM

Home

ARCNAME

DEVELOP

DEVELOP

DEVELOP

DEVELOP

Search Parameters

Archive name	Job name
*EQQMLOG	
Sysout class	User ID
Job status	
All	

Click on the controller (TCBT)

Archive Listing - IBM Tivoli Output Manager on BJTTWS - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Archive Listing - IBM Tivoli Output Manager ... +

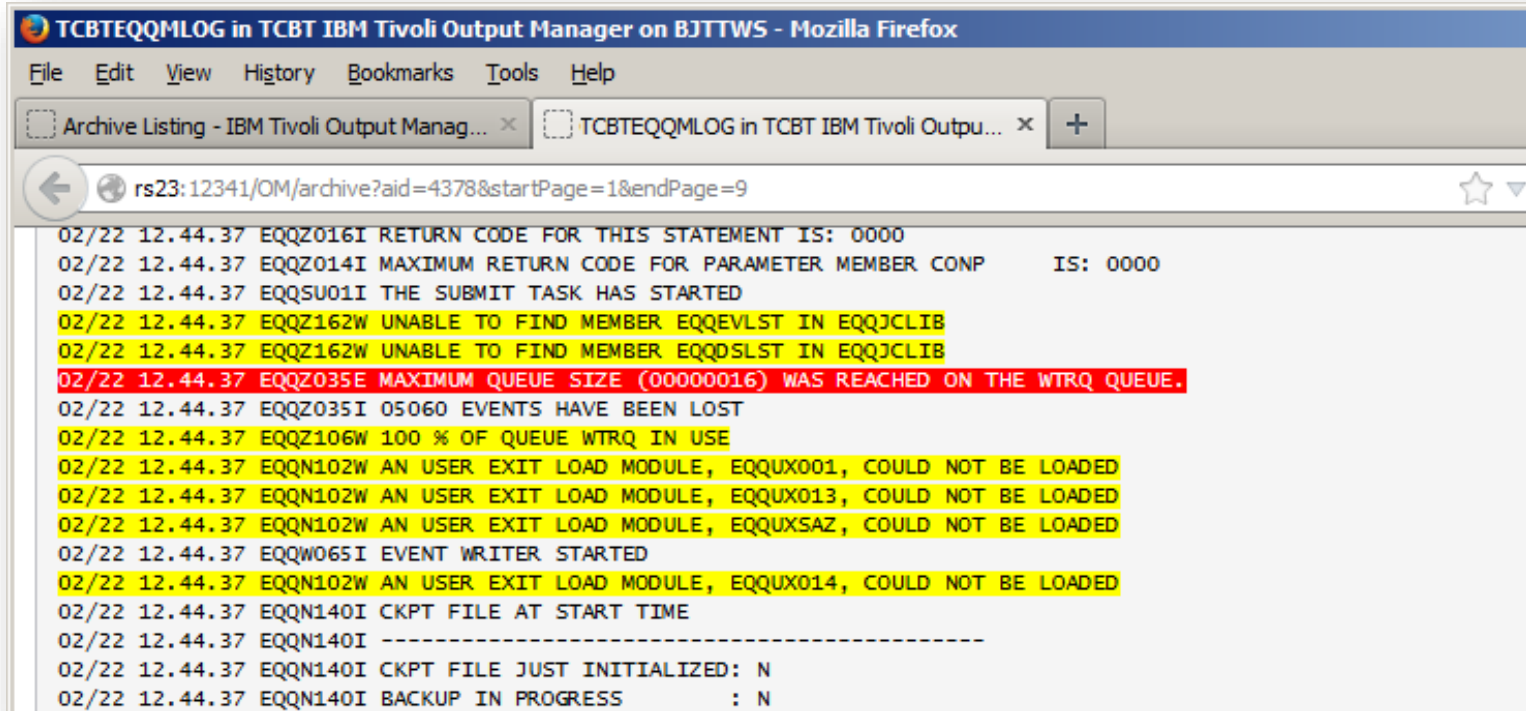
rs23: 12341/OM/archives?arcname=*EQQMLOG&sortcolumn=7&sortmode=down

IBM **Tivoli** Output Manager | for z/OS

Home Search 26 rows match search criteria.

	ARCNAME	ARCHIVE TIME	JOBNAME	CLASS	JOBID
▶ ⚙	TDBTEQQMLOG	2014-03-01-13.36.42	TDBT	Q	S0918679
▶ ⚙	TCBTEQQMLOG	2014-03-01-13.36.16	TCBT	Q	S0918674
▶ ⚙	TSBTEQQMLOG	2014-03-01-13.36.16	TSBT	Q	S0918678
▶ ⚙	TDBTEQQMLOG	2014-02-22-12.32.32	TDBT	Q	S0821926
▶ ⚙	TSBTEQQMLOG	2014-02-22-12.32.23	TSBT	Q	S0821911
▶ ⚙	TCBTEQQMLOG	2014-02-22-12.32.20	TCBT	Q	S0821907
▶ ⚙	TDBTEQQMLOG	2014-02-15-16.02.25	TDBT	Q	S0739271
▶ ⚙	TCBTEQQMLOG	2014-02-15-16.02.13	TCBT	Q	S0739266
▶ ⚙	TSBTEQQMLOG	2014-02-15-16.02.13	TSBT	Q	S0739270
▶ ⚙	TDBTEQQMLOG	2014-02-08-12.36.46	TDBT	Q	S0641547
▶ ⚙	TCBTEQQMLOG	2014-02-08-12.36.32	TCBT	Q	S0699828

Another example of Highlighting



The screenshot shows a web browser window titled "TCBTEQQMLOG in TCBT IBM Tivoli Output Manager on BJTTWS - Mozilla Firefox". The address bar shows the URL "rs23:12341/OM/archive?aid=4378&startPage=1&endPage=9". The log content is as follows:

```
02/22 12.44.37 EQQZ016I RETURN CODE FOR THIS STATEMENT IS: 0000
02/22 12.44.37 EQQZ014I MAXIMUM RETURN CODE FOR PARAMETER MEMBER CONP      IS: 0000
02/22 12.44.37 EQQS001I THE SUBMIT TASK HAS STARTED
02/22 12.44.37 EQQZ162W UNABLE TO FIND MEMBER EQQEVLSLST IN EQQJCLIB
02/22 12.44.37 EQQZ162W UNABLE TO FIND MEMBER EQQDSLST IN EQQJCLIB
02/22 12.44.37 EQQZ035E MAXIMUM QUEUE SIZE (00000016) WAS REACHED ON THE WTRQ QUEUE.
02/22 12.44.37 EQQZ035I 05060 EVENTS HAVE BEEN LOST
02/22 12.44.37 EQQZ106W 100 % OF QUEUE WTRQ IN USE
02/22 12.44.37 EQQN102W AN USER EXIT LOAD MODULE, EQQUX001, COULD NOT BE LOADED
02/22 12.44.37 EQQN102W AN USER EXIT LOAD MODULE, EQQUX013, COULD NOT BE LOADED
02/22 12.44.37 EQQN102W AN USER EXIT LOAD MODULE, EQQUXSAZ, COULD NOT BE LOADED
02/22 12.44.37 EQQW065I EVENT WRITER STARTED
02/22 12.44.37 EQQN102W AN USER EXIT LOAD MODULE, EQQUX014, COULD NOT BE LOADED
02/22 12.44.37 EQQN140I CKPT FILE AT START TIME
02/22 12.44.37 EQQN140I -----
02/22 12.44.37 EQQN140I CKPT FILE JUST INITIALIZED: N
02/22 12.44.37 EQQN140I BACKUP IN PROGRESS      : N
```

(W)arning messages in reverse video yellow
(E)rror messages in reverse video red

An example of Reports

```

S1 - rs23 - rs23mod5 - BlueZone Mainframe Display
File Edit Session Options Transfer View Script Help
File Options Search Help

IBM Tivoli Output Manager - Captured Reports

Command ==>

Cmd  Report name                Capture time      Job name Job ID   Type
S___ SD Indexed by Title          2014 03/13 10:22  SDBICE11 J0201960 Indexed
___  SD Indexed by Year released 2014 03/13 10:22  SDBICE11 J0201960 Indexed
___  SD Episodes                  2014 03/12 13:21  SDBICE11 J0181246 Basic
___  SD Indexed by Title          2014 03/12 13:21  SDBICE11 J0181246 Basic
___  SD Indexed by Year released 2014 03/12 13:21  SDBICE11 J0181246 Basic
___  SD In
___  SD In
___  SD Episodes                  2014 03/12 13:20  SDBICE11 J0181232 Basic
___  SD Indexed by Title          2014 03/12 13:20  SDBICE11 J0181232 Basic
___  SD Indexed by Year released 2014 03/12 13:20  SDBICE11 J0181232 Basic
___  SD Indexed by Title          2014 03/12 13:20  SDBICE11 J0181232 Indexed
___  SD Indexed by Year released 2014 03/12 13:20  SDBICE11 J0181232 Indexed
___  SD Episodes                  2014 03/12 13:01  SDBICE11 J0181132 Basic
***** Bottom of Data *****
  
```

Give me a list of all of the Scooby Doo episode titles

Indexed of values in the TITLE field

```

S1 - rs23 - rs23mod5 - BlueZone Mainframe Display
File Edit Session Options Transfer View Script Help
File View Search Help

IBM Tivoli Output Manage

Command ==>

Report name: SD Indexed by Title

Cmd  Capture Time      TITLE
____  _____
_____ 2014 03/13 10:22:01  A Bicycle Built For Boo!
_____ 2014 03/13 10:22:01  A Clue for Scooby-Doo
S_____ 2014 03/13 10:22:01  A Gaggle of Galloping Ghosts
_____ 2014 03/13 10:22:01  A Haunting in Crystal Cove
_____ 2014 03/13 10:22:01  A Menace in Venice 2
_____ 2014 03/13 10:22:01  A Night of Fright is No Delight
_____ 2014 03/13 10:22:01  A Scary Night with a Snow Bea >
_____ 2014 03/13 10:22:01
_____ 2014 03/13 10:22:01
_____ 2014 03/13 10:22:01  A Scooby-Doo! Christmas
_____ 2014 03/13 10:22:01  A Terrifying Round
_____ 2014 03/13 10:22:01  A Tiki Scare is No Fair
_____ 2014 03/13 10:22:01  Aliens Among Us
_____ 2014 03/13 10:22:01  All Fear the Freak
_____ 2014 03/13 10:22:01  Almost Ghosts
_____ 2014 03/13 10:22:01  Almost Purr-fect
_____ 2014 03/13 10:22:01  Art of Darkness!
_____ 2014 03/13 10:22:01  Attack of the Headless Horror
_____ 2014 03/13 10:22:01  Battle of the Humungonauts

```

Show me what the “Gaggle of Galloping Ghosts” was about.

Report contents

```

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File Edit Session Options Transfer View Script Help
File Options Help

BROWSE      Page 1
Command ==>

***** Top of Data *****
Episode      Title                               Villain                               Identity
SD-11        A Gaggle of Galloping Ghosts             The monsters                         Big Bob Oakley

On the road, the gang pulls up to an ancient Franken Castle, transported
stone-by-stone from Transylvania. Upon entering the castle, however, they
find that it is apparently haunted by three monsters: a vampire, a werewolf,
and a Frankenstein's monster.

The immortal catchphrase "I'd have gotten away with it, too, if it wasn't for
those blasted kids and that dog!" was first uttered in this episode.

***** Bottom of Data *****
  
```

“Those blasted kids and that dog”

The Bits and Bytes

- Where the rubber meets the road
 - How do I set it up?
 - How does it work?



How do I set it up?

Specify ITOM(YES) in JTOPTS.

Are there any other questions?

How do I set it up?

- Specify ITOM(YES) in JTOPTS.
- Oh, and read chapter 31, “Browsing a job log with IBM Tivoli Output Manager” in the IBM Tivoli Workload Scheduler for z/OS, Version 9 Release 2, Managing the Workload publication.
- Available at:
http://publib.boulder.ibm.com/infocenter/tivihelp/v47r1/topic/com.ibm.tivoli.itws.doc_9.2/eqqr1mst.pdf

How does it work?

- The “LJ” line command stores Application ID, Operation Number, and Input Arrival into ISPF profile variables
- The ITOM exec is invoked
- If the variables exist then ITOM parses them into an Archive Name and takes the user directly to the Search Archives panel
- Upon exit, the user is returned to where they were in TWS panels

What's Next?

- Set z/OS instance names without the exit
- Record instance name and CC for zCentric jobs
- Accomplished via:
 - TWSz JLOGHDRTEMPL(EQQOUCH)
 - ITOM Text Processing Language rules

“LJ” line command for zCentric job

```

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File Edit Session Options Transfer View Script Help

----- MODIFYING OPERATIONS IN THE CURRENT PLAN (left Row 8 to 12 of 133
Command ==>                                     Scroll ==> CSR

Enter the GRAPH command above to view list graphically,
enter the HIST command to select operation history list, or
enter any of the following row commands:
J   - Edit JCL                      M   - Modify                      B   - Browse details
DEL - Delete Occurrence              MH  - Man. HOLD                  MR  - Man. RELEASE oper
O   - Browse operator instructions  NP  - NOP oper                  UN  - UN-NOP oper
EX  - EXECUTE operation              D   - Delete Oper             RG  - Remove from group
L   - Browse joblog                  K   - Kill                     RI  - Recovery Info
LJ  - Browse joblog via ITOM          FJR - Fast path JR
RC  - Restart and CleanUp            FSR - Fast path SR
TCJ - Target Critical Job            FSC - Fast path SC
BND - Reset bind information

Row  Application id  Operat  Jobname  Input Arrival  Dep  Cond  Dep  S  W
Cmd  ws   no.   Date    Time  Suc  Pre  Suc  Pre  P
'''  @ZCENTRIC      WIN7 010 TWSZC010 14/07/28 11.55  1    0    0    0  C
LJ   @ZCENTRIC      WIN7 020 TWSZC020 14/07/28 11.55  1    1    0    0  E
'''  @ZCENTRIC      WIN7 030 TWSZC030 14/07/28 11.55  1    1    0    0  W
'''  @ZCENTRIC      WIN7 041 TWSZC04A 14/07/28 11.55  1    1    0    0  W
'''  @ZCENTRIC      WIN7 044 TWSZC04D 14/07/28 11.55  1    1    0    0  W
. . . . .

```

Search panel automatically populated

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File Edit Session Options Transfer View Script Help

File Help

IBM Tivoli Output Manager - Search for Archived Sysouts

C Command ==> _____

P Job Name . . . _____

Sysout Class . . . _____

Archive Name . @ZCENTRIC 020 1407281155

User ID _____

Exceptions . . . _____ (Yes, No, or blank)

After Date . . . _____ (YYYY/MM/DD, Today, T-nnnn)

Before Date . . . _____ (YYYY/MM/DD, Today, T-nnnn)

After Time . . . _____ (HH:MM:SS)

Before Time . . . _____ (HH:MM:SS)

Save Criteria? No (Yes/No)

Press ENTER to process or CANCEL to bypass

More: +

527.**

Job completed in error

```
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File Edit Session Options Transfer View Script Help
File Options Search Help

IBM Tivoli Output Manager - Archived Sysouts

Command ==>

Cmd  Archive name      Job name Job ID   Archive Time      Cond  Ste
S    @ZCENTRIC 020 1407281155  T023    S0536230 2014 07/28 11:55:27 1228  T02
***** Bottom of Data *****
```

Job log header template inserts instance name

```

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File Edit Session Options Transfer View Script Help
File Options Help

BROWSE @ZCENTRIC 020 1407281155 > T023 S0536230 T023 TWSZC020 D0000217
Command ==>

***** Top of Data *****

=====
=                                JOBLOG HEADER
= TWS OCCURRENCE --> @ZCENTRIC 020 201407281155
=
= Occurrence name : @ZCENTRIC
= Occurrence IA   : 2014/07/28 11:55
= Job name        : TWSZC020
= Work station    : WIN7
= Operation number: 020
= Start time      : 2014/07/28 11:55
= End time        : 2014/07/28 11:55
= Process ID      : 3796
= Duration        : 0.00.00
= Status          : ERROR
= Return code     : 1228
= Hostname        : WAL-VM-TWS01
=
=====

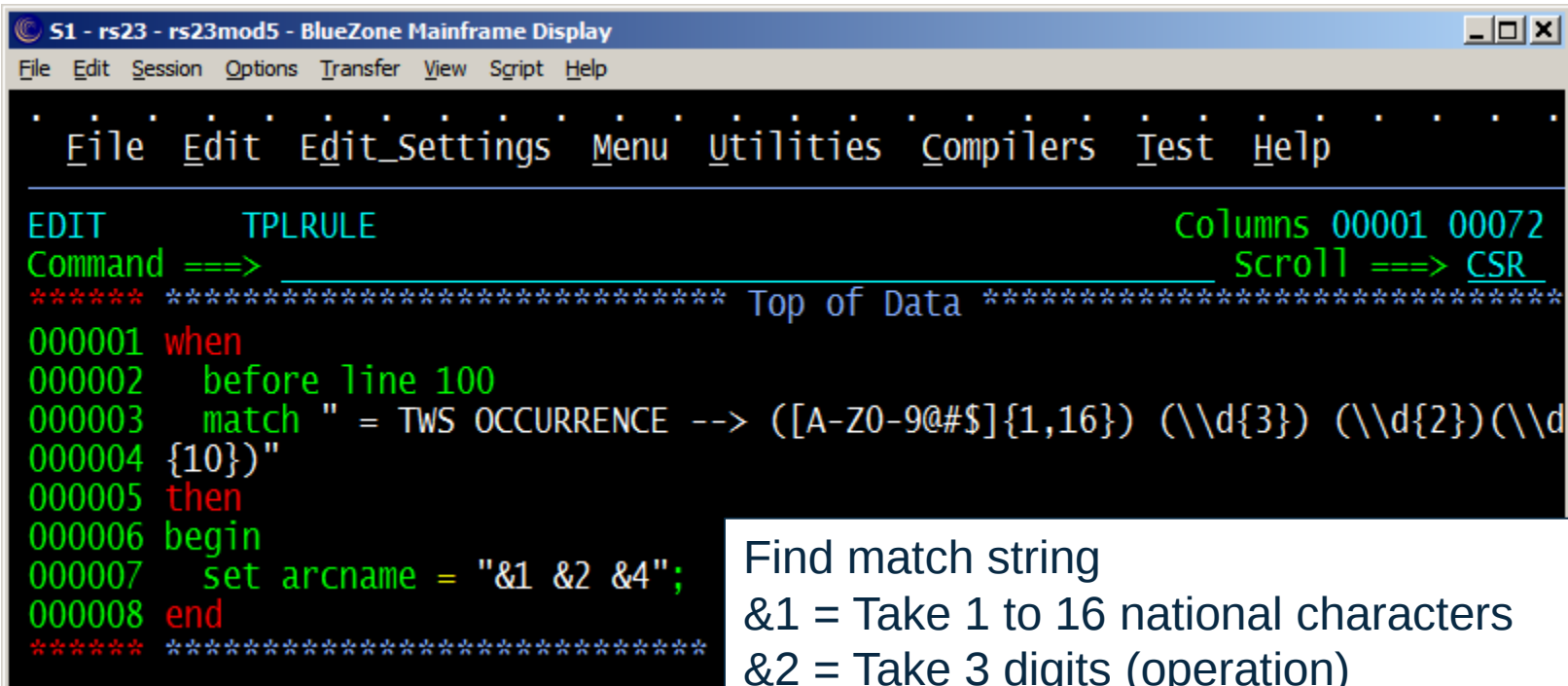
```

```

=====
=                                JOBLOG HEADER
= TWS OCCURRENCE --> ${occname} ${opernum} ${IAYYYY}${IAMM}${IADD}
=
= Occurrence name : ${occname}
= Occurrence IA   : ${IAYYYY}/${IAMM}/${IADD} ${IAhh}:${IAMm}
= Job name        : ${jobname}
= Work station    : ${wsname}
= Operation number: ${opernum}
= Start time      : ${SYYYY}/${SMM}/${SDD} ${Shh}:${Smm}
= End time        : ${EYYYY}/${EMM}/${EDD} ${Ehh}:${Emm}
= Process ID      : ${processid}
= Duration        : ${duration}
= Status          : ${status}
= Return code     : ${returncode}
= Hostname        : ${hostname}
=
=====

```

Parse string into Archive Name



```

S1 - rs23 - rs23mod5 - BlueZone Mainframe Display
File Edit Session Options Transfer View Script Help

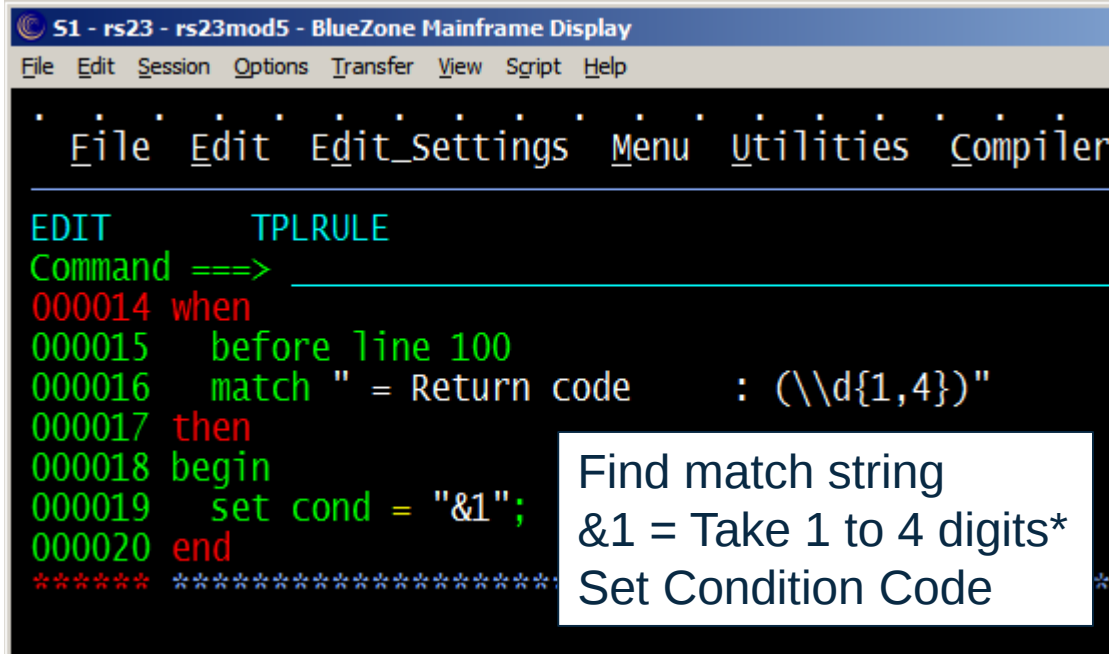
File Edit Edit_Settings Menu Utilities Compilers Test Help

EDIT      TPLRULE                      Columns 00001 00072
Command ==>                               Scroll ==> CSR
***** ***** Top of Data *****
000001 when
000002   before line 100
000003   match " = TWS OCCURRENCE --> ([A-Z0-9@#${1,16}) (\\d{3}) (\\d{2})(\\d
000004 {10})"
000005 then
000006 begin
000007   set arcname = "&1 &2 &4";
000008 end
*****
  
```

Find match string
 &1 = Take 1 to 16 national characters
 &2 = Take 3 digits (operation)
 &3 = Take first two digits of {IAYYYY}
 &4 = Take remaining 10 digits of input arrival
 Set Archive Name

*Two digit year variable coming {IAYY}

Extract Return Code



```

S1 - rs23 - rs23mod5 - BlueZone Mainframe Display
File Edit Session Options Transfer View Script Help

File Edit Edit_Settings Menu Utilities Compiler

EDIT      TPLRULE
Command ==>
000014 when
000015   before line 100
000016   match " = Return code      : (\\d{1,4})"
000017 then
000018 begin
000019   set cond = "&1";
000020 end
*****
  
```

Find match string
&1 = Take 1 to 4 digits*
Set Condition Code

*Could be character string instead; need not be digits

Summary

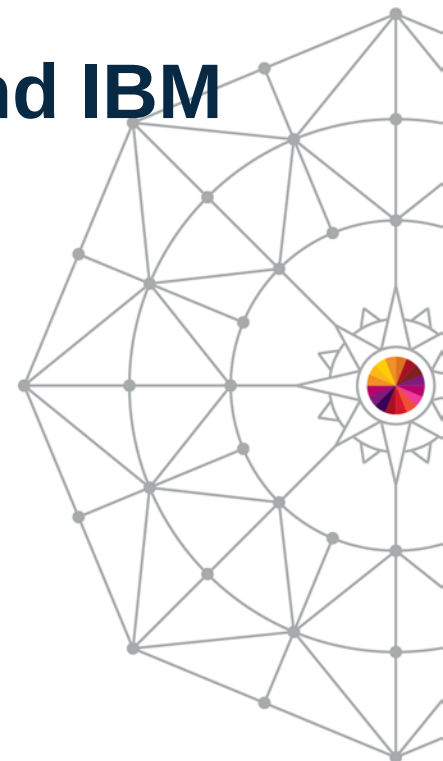
- Seamless access to job logs from TWS panels
- Retain job logs for any length of time
- Access more than just JES data sets
- Record output from distributed jobs
- Online viewing via web browser of TSO/ISPF
- Compare and contrast historical run times and previous exceptions



Product Integration news: Tivoli Workload Scheduler (TWSz) and IBM Tivoli Output Manager (ITOM)

Steve Bice
Rocket Software

August 2014



#SHAReorg



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