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BSc (Hons)

Matric No: 2005xxxxx

Honours Project Appendix

Project Title: Evaluation of Tools to Support Large Scale Batch Scheduling
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1.0 Full Requirements Matching Results

The following tables outline the results of the full requirements matching exercise of all 4 tools used within the research of the project:

Alerting	**$U**	**Autosys**	**Ctl-M**	**Cron**
Alert Notification by Customizable Email, BlackBerry, Messenger, Logged to Event Logs	Y	Y	Y	Y
Alert Notification on Pending jobs	N	N	Y	N
Alert Objects containing multiple Alert Conditions for easy reference and updating	Y	Y	Y	N
Alert Triggers of Jobs and Job Schedules	N	Y	Y	N
Alerts on Jobs and Plans Events	Y	Y	Y	N
Queue Alerts	N	Y	Y	N
Ability to extract alert notifications for external application feeds	N	Y	Y	N
Ability to react to alerts in real time	Y	Y	Y	Y
Ability to alter jobs when running in response to an alert	Y	Y	Y	N
Ability to alter scripts when running in response to an alert	N	N	Y	N

Event Scheduling & Control	**$U**	**Autosys**	**Ctl-M**	**Cron**
Event Log	Y	Y	Y	N
Alerts as job triggers	N	Y	Y	N
Customizable Alerts such as E-Mail, Wireless Device; Messenger and BlackBerry	N	N	Y	N
Event based jobs referenced in Schedule by anticipated Run Times	N	Y	N	N
Event Job Triggers	N	Y	Y	N
File System Event Triggers (Create, Delete, Move, Change) – Windows & Non-Windows	N	Y	Y	N

General Features	**$U**	**Autosys**	**Ctl-M**	**Cron**
Ability to view both windows and non Windows systems visible within one application	Y	Y	Y	N
Built-in Reporting facility (both interactive and non-interactive)	N	Y	Y	N
Cross Platform Capability: Windows, UNIX, Linux, OpenVMS	Y	Y	Y	N
Date/Time, Event and ad-hoc Job Scheduling	Y	Y	Y	Y
Export / Import Utility for Server Migration	Y	Y	Y	N
Full Support of the Windows Security Model	N	N	N	N
High Availability Architecture support for Cluster and Non-Cluster	Y	Y	Y	N
Integrated Monitoring Support (ability to report to external applications)	N	N	Y	N
Master Console connects to multiple Schedules simultaneously (multiple schedules viewable via the 1 instance)	Y	Y	Y	N
Backend Database Support	Y	Y	Y	Y
User Interface: Windows Applications	Y	Y	Y	N
User Interface: Graphical;	N	Y	Y	N
User Interface: Cross Platform Command Line;	Y	N	N	N
User Interface: COM	Y	Y	Y	Y

Job Execution & recovery	**$U**	**Autosys**	**Ctl-M**	**Cron**
Logging and Archives (central based)	Y	Y	Y	N
Centralized View of Log Files from Client Machine	N	Y	Y	N
Job Failure Restart (failover or wait for machine)	Y	Y	Y	N
Job/Queue Prioritization	N	Y	Y	N
Machine failure Restart (failover or wait for machine)	N	N	Y	N
Monitoring can proactively terminate an overrun plan or job	N	N	N	N
Restarts can be delayed and a maximum number imposed	Y	N	Y	N
Run Time and CPU Monitoring (Overrun and Under-run actions)	N	Y	Y	N
Work Loading Balancing and additional Scheduling Algorithm support	Y	Y	Y	N

Jobs and schedules	**$U**	**Autosys**	**Ctl-M**	**Cron**
Job support for individual jobs allowing flow control and repetition	N	Y	Y	N
Email reporting ability built into individual jobs (can report to email addresses upon meeting conditions such as failure)	Y	Y	Y	Y
Able to schedule Database Jobs (SQL, Oracle, DTS, SSIS, etc.)	Y	Y	Y	Y
File System Built-in Jobs (Copy, Rename, Move, Delete: Files & Directories)	Y	Y	Y	Y
Nested Job creation (jobs executed within a set of jobs etc)	N	Y	Y	Y
Network Jobs (Ping, FTP/SFTP/FTPS, etc)	Y	Y	Y	Y
Schedules can be managed as Jobs via commands (e.g. Abort, Hold/Release, etc)	Y	Y	Y	N
Schedules can have a set schedule like each job (simplifies running a related set of jobs via setting the schedule of the overall schedule rather than all jobs within it)	N	N	Y	N
Schedules can contain all objects including Queues, User, Resource Calendars objects	N	N	Y	N
Process Job (e.g. exe, scripts, etc.) support	Y	Y	Y	N
Script Jobs Types Built-in (no external script file needed)	N	Y	Y	N
Script Language Independent (no scripting languages to learn)	N	Y	Y	N
Secure FTP Job Types Built-in	N	Y	Y	N

Scheduling Restraints &Dependencies	**$U**	**Autosys**	**Ctl-M**	**Cron**
Business Calendars (Non-Workdays, Holidays)	Y	Y	Y	N
Business Date Processing for schedule/Job Scheduling: Skip, Previous Business Day, Next Business Day	N	Y	Y	N
Date/Time Constraints	Y	Y	Y	Y
File Constraints: Presence, Absence, Size, Exclusivity, Date, Wild Cards	N	Y	Y	N
Job/Schedule Constraints – Success or Failure (Exit Code or String based)	N	N	Y	N
Maximum end time (ending time range Plan/Job can execute)	Y	Y	Y	N
Resource Constraints (to synchronize access to finite resources)	N	Y	Y	N
Variables can act as constraints (including dynamic variables from data sources such as SQL or WMI (WQL)	Y	Y	Y	N

Schedule & Job History	**$U**	**Autosys**	**Ctl-M**	**Cron**
Daily Activity filterable by job or Job Plan Status	N	N	N	N
Instance History	N	Y	Y	N
Instance History Retention Period	N	Y	Y	N
View Batch Run: Graphical and by Job	N	Y	Y	N
Real time batch playback	N	N	Y	N
Metrics website with jobs per application/schedule	N	N	Y	N

Scheduling Capabilities	**$U**	**Autosys**	**Ctl-M**	**Cron**
Ad-hoc Scheduling (one-time or deferred)	Y	Y	Y	Y
Alert based Scheduling	N	Y	Y	N
Date and Time Scheduling (Fiscal calendar based or imported saved calendars)	Y	Y	Y	Y
Event based Scheduling	N	Y	Y	N
Execution Queue support (Priorities based on resources)	N	Y	Y	N
File Triggers (i.e. Creation, Deletion, Modification)	N	Y	Y	N
Machine selection algorithms (including Load Balancing)	Y	Y	Y	N
Multiple Time Zone support	Y	Y	Y	N
Non-Pattern based Date and Time Scheduling (Exotic Scheduling)	N	Y	Y	N
On-Demand Scheduling (manual or programmatic)	Y	Y	Y	Y
Dynamic queue assignment at run-time based on a variable	Y	Y	Y	N

User Interface	**$U**	**Autosys**	**Ctl-M**	**Cron**
All-in-One integrated Admin Interface designed for ease of use	Y	Y	Y	Y
2 part Monitoring and scheduling system applications	Y	Y	Y	N
Command Line Interface	Y	Y	Y	Y
Cross Platform Command Line (ABATCMD)	Y	Y	Y	N
Daily Activity View	Y	Y	Y	Y
Multiple schedule view via 1 application instance	Y	Y	Y	N
Operator Automation Runbook	N	Y	N	N
Web Interface for use as a Thin Client	N	Y	Y	N

Variable and parameter passing	**$U**	**Autosys**	**Ctl-M**	**Cron**
Parameters can be passes into a job	Y	Y	Y	Y
Jobs can pass data to jobs at execution-time	Y	Y	Y	Y
Variable support to pass data between plans/jobs	Y	Y	Y	Y
Variables can be constants or use various data sources (i.e. WMI, SQL query, etc)	Y	Y	Y	N
Variables can be exported to a running job (i.e. environment variables)	N	Y	Y	N
Variables can be used to substitute a value for almost any “string” property within a schedule or Job	N	Y	Y	N

2.0 Requirements Checklist Explanation (85)

The following outlines the 10 categories of the requirements matching and gives a full explanation of each of the requirements.

Alerting

Alert Notification by Customizable Email, BlackBerry, Messenger, Logged to Event Logs

- Required via most batch scheduling users in particular required for Company X. Requires the ability to send alerts to various sources with custom messages/ information for each alert or failure. (BMC Manual and Company X)

Alert Notification on Pending jobs

- Ability to send alerts on jobs which have not yet run or that are late. This allows for action to be taken should it impact the business. (active batch and company X)

Alert Objects containing multiple Alert Conditions for easy reference and updating

- Alerts can be configured for different conditions on each job (late, fail, pending a file etc) and can be easily accessible, referenced and updated on an ad hoc basis. (active batch)

Alert Triggers of Jobs and Job Schedules

- Alerts can be added to jobs individually, applications as a whole or individual schedules of an application to allow for monitoring all aspects of the batch. (Autosys)

Alerts on Jobs and Plans Events

- Alerts on jobs and those which are dependant on the job which has alerted. (company X)

Queue Alerts

- Ability to send the alerts to a queue system with priority levels and a method of handling the errors manually to intervene and continue the batch process. (active batch, BMC manual and company X)

Ability to extract alert notifications for external application feeds

- Ability to export/ send the alert properties to external applications or monitoring systems for custom alerting and monitoring. (company x)

Ability to react to alerts in real time

- Real time monitoring and alerting and ability to alter and interact with the batch schedule in a real time manor to minimise the down time of a batch and restart the

processes without failure. Job scheduling alterations may also be required in real time to alter the jobs tasks. (BMC and Company X)

Ability to alter jobs when running in response to an alert

- Ability to stop, restart, alter, and delete jobs running within a live batch in order to adapt the schedule course and outcome. This may also be required to introduce ad hoc utility jobs or react to environmental changes within the business. (company x and BMC)

Ability to alter scripts when running in response to an alert

- Ability to change the scripts of script type jobs which are running via the schedule if script type jobs are an option within the software. This allows for scrip updates to Perl scripts etc which will alter the run time objectives of the job within the schedule. This allows for faults to be dealt with easier and also reduces the down time of an application as it does not require an emergency release or patch to fix the problem. (company x, BMC, Autosys and active batch

Event Scheduling and Control

Event Log

- Ability to log all events on jobs be it success, failure, late completions or alterations to the jobs or scripts. The log will also be able to tell which user changed the jobs and when. (BMC, , Autosys, active batch and company x)

Alerts as job triggers

- Alerts can trigger the start of jobs based on conditions of the alert. This allows for an automated process to begin taking action against a failed or late jobs thus handle errors automatically. Particularly useful if a job has a known issue which may occur often and there can be a process to minimise the impact on the batch yet meet the task goal. (company x)

Customizable Event Alerts such as E-Mail, Wireless Device; Messenger and BlackBerry

- Ability to report events (such as the trigger of a job based on an alert) to users via the above customisable devices. The event log should also be accessible via these devices. (active batch)

Event based jobs referenced in Schedule by anticipated Run Times

- Ability to access jobs based reference table based on the anticipated run times or archived run times. (active batch)

Event Job Triggers

- Ability to have an event handler as a trigger for a job. Thus if an event occurs then start a pre defined path of jobs to deal with the issue. (active batch)

File System Event Triggers (Create, Delete, Move, Change) – Windows & Non-Windows

- Ability to react to events (as above) on both windows and non windows platforms to react to different events and issues within an operating system and application. (active batch)

General

Ability to view both windows and non Windows systems visible within one application

- The cross platform compatibility to view many systems via one application monitoring tool. (Company X)

Built-in Reporting facility (both interactive and non-interactive)

- Built in reporting of various batch issues such as run times, late jobs, failed jobs and average completion times. Used to monitor and analyse the batches. (company x)

Cross Platform Capability: Windows, UNIX, Linux, OpenVMS

- Ability to run the software and batches across various systems with cross platform dependencies between differencing OS available. (company x)

Date/Time, Event and ad-hoc Job Scheduling

- Ability to schedule jobs on the above basis. Date and time scheduling, trigger scheduling and ad hoc (as required) scheduling must all be supported (active batch)

Export / Import Utility for Server Migration

- Ability to import to and export from the batch scheduling software servers for easy migrations. (active batch)

Full Support of the Windows Security Model

- No issues with running the software on the windows security model between servers and platforms. Allows for full use of software with no windows errors or issues decaying the use of the software or its efficiency. (company x)

High Availability Architecture support for Cluster and Non-Cluster

- Ability to support various forms of system and hardware architecture including cluster networks and non cluster networks. (active batch)

Integrated Monitoring Support

- Built in monitoring support model with ability to show and queue the alerts/events etc from within the same software package. (company x)

Master Console connects to multiple Schedules simultaneously

- Ability to view multiple servers, platform and geographical location applications via the 1 view which can be filtered for the required views by the user. This allows for all cross platform and server dependencies to be viewed and all errors etc to be seen via the one overall view. This minimises the impact to a batch should one fail dependant on another as all users can view the applications and the issues which have lead to an error. (company x)

Backend Database Support

- Backend database support required for manual import or export of schedule or job properties to the software's underlying database structure with appropriate security functions in place for user access. (company x)

User Interface: Windows Applications

- Must have a windows interface for use on windows platform (company x)

User Interface: Graphical;

- Must have a graphical representation of the schedules and batches for the user to view within the software itself. (company x)

User Interface: Cross Platform Command Line;

- Ability to have cross platform command line intervention to bring up and view applications and schedules etc. (active batch)

Job Execution and Recovery

Logging and Archives (central based)

- Log all job processes and archive the jobs for a set period of time predefined by the user. Also ability to log failed jobs until cleared by users after they have been reacted to. (company x)

Centralized View of Log Files from Client Machine

- Ability to view the logs from any client machine to any schedule and application so long as the user is allowed access. (company x)

Job Failure Restart (failover or wait for machine)

- Ability to swap job over to another machine due to machine or network failure or wait on machine having resource to complete. (BMC)

Job/Queue Prioritization

- Ability to queue jobs based on resource and priority levels based on machines resource and processing.

Monitoring can proactively terminate an overrun plan or job

- Ability to automatically cancel jobs which have over run or are out of time frame but not a priority to the batch. (company x)

Restarts can be delayed and a maximum number imposed

- Jobs can be scheduled to restart or wait and restart based on pre defined amount and time delay. This can be useful for jobs which must run at set points in a schedule. (BMC)

Run Time and CPU Monitoring (Overrun and Under-run actions)

- Ability to monitor processing and run times of jobs on machines with trigger levels for ad hoc jobs. (active batch)

Work Loading Balancing and additional Scheduling Algorithm support

- Ability to adjust load balancing and scheduling algorithms used to schedules hobs on machines across each schedules.

Jobs and Schedules

Job support for individual jobs allowing flow control and repetition

- Ability to show flow of jobs and schedule repetitions into a schedule if required. (active batch)

Email reporting ability built into individual jobs

- Each job should have the ability to have built in email reporting based on certain conditions such as over runs or failures

Able to schedule Database Jobs (SQL, Oracle, DTS, SSIS, etc.)

- Ability to schedule tasks for database utilities or management within a schedule. (Active batch)

File System Built-in Jobs (Copy, Rename, Move, Delete: Files & Directories)

- Ability to schedule in file system jobs into a batch (company x)

Nested Job creation (jobs executed within a set of jobs etc)

- Ability to have jobs nested within applications and different levels. These levels can then have cross platform or cross schedule dependencies. (company x)

Network Jobs (Ping, FTP/SFTP/FTPS, etc)

- Network job scheduling ability to create these within jobs of a schedule (active batch)

Schedules can be managed as Jobs via commands (e.g. Abort, Hold/Release, etc)

- Schedules can be managed overall in the same manor as individual jobs. To allow total overall control of applications and nested jobs. (company x)

Schedules can have a set schedule like each job

- Allows for schedules to have an overall schedule rather than repetition within every job in a group. (BMC)

Schedules can contain all objects including Queues, User, Resource Calendars objects

- Specific schedule groups can include the information above nested within the group and applicably to all jobs (active batch)

Process Job (e.g. exe, scripts, etc.) support

- Job type job, script jobs and exe jobs supported for scheduling (BMC)

Script Jobs Types Built-in (no external script file needed)

- Ability to handle scrip jobs directly within the job schedule without any external plug ins or libraries (BMC)

Script Language Independent (no scripting languages to learn)

- No need for programming language to interact and create schedules. High level graphical interaction deals with the underlying programming

Secure FTP Job Types Built-in

- Built in secure File Transfer built into software and useable within schedules (bmc)

Schedule Restraints and Dependencies

Business Calendars (Non-Workdays, Holidays)

- Ability to save differing business calendars and have jobs/ applications follow specific calendars as required. This allows for certain holidays to be taken into account thus stop and start schedules in accordance to this. It also allows for day light saving and leap years to be handled with ease (BMC)

Business Date processing for schedule/Job Scheduling: Skip, Previous Business Day, Next Business Day

- Able to deal with specific business days and skip days in relation to the business calendar being used. (BMC)

Date/Time Constraints

- Ability to schedule jobs based on exotic time and date constraints specific to each job (Company x)

File Constraints: Presence, Absence, Size, Exclusivity, Date, Wild Cards

- Ability to trigger jobs based on the presence creation etc of files within a system or area. (active batch)

Job/Schedule Constraints – Success or Failure (Exit Code or String based)

- The ability to have successful or unsuccessful jobs and ability to read return codes from scripts and give appropriate path of jobs or success statement back out (company x)

Maximum end time (ending time range Plan/Job can execute)

- Specifying deadline times for jobs and ability to handle the overruns (active batch)

Resource Constraints (to synchronize access to finite resources)

- Ability to set resource constraints on a job such as a hardware or software resource (machine available, database ready etc) (BMC)

Variables can act as constraints (including dynamic variables from data sources such as SQL or WMI (WQL)

- Ability to use variables within jobs as constraints and feed them into dependant jobs etc the variables can be defined and altered as required by each job (active batch)

Schedule & Job history

Daily Activity filterable by job or Job Plan Status

- Able to show daily work flow for jobs and applications in a graphical representation with filters used to show those which the users wish to view based on job types names etc (BMC)

Instance History

- Ability to show the history of job instances within an application schedule based on an archive of the status of jobs the times and dates. (active batch)

Instance History Retention Period

- Ability to hold the data of job history for a set period of time. (BMC)

View Batch Run: Graphical and by Job

- Ability to view the run of the batch as it runs both via graphs and jobs individually within the batch as they are running live. Also ability to see the dependencies across all jobs within the batch. (active bactch)

Real time batch playback

- Ability to re run a batch in real time and monitor the progress and status of the jobs and batch from a given period in the retention history. Allows for debug and testing to be done with ease (company x)

Metrics website with jobs per application/schedule

- Reporting function in the form of a web site with day by day metrics and historical data based on the jobs, applications and business areas for the execution. (company x)

Scheduling Capabilities

Ad-hoc Scheduling (one-time or deferred)

- Ability to schedule ad hoc jobs that area created within a schedule but not scheduled to run. They jobs can be activated on an ad hoc basis. This can be useful for maintenance or error checking within a schedule. (company x)

Alert based Scheduling

- Schedules activated and react to alerts based on pre defined conditions (active batch)

Date and Time Scheduling (Fiscal calendar based or imported saved calendars)

- Ability to schedule based on basic time and dates for individual jobs and groups within an application. (company x)

File Triggers (i.e. Creation, Deletion, Modification)

- Ability to schedule jobs to start stop etc on the creation, deletion or modification to a file from another job or on another system pre defined by the job itself. (company x)

Machine selection algorithms (including Load Balancing)

- Ability to use set algorithms to decide which machine to run the jobs on. (active batch)

Multiple Time Zone support

- Ability to support all time zones and cross application time zones between jobs. (company x)

Non-Pattern based Date and Time Scheduling (Exotic Scheduling)

- The ability to have exotic scheduling of jobs that do not follow a set pattern. This allows for example to have jobs running once a year on every Saturday after the last day of a month etc. Allows for schedules to be flexible rather than ridged and following a day to day pattern.

On-Demand Scheduling (manual or programmatic)

- Manual or programmed intervention in specific conditions (BMC)

Dynamic queue assignment at run-time based on a variable

- Ability to queue jobs based on the parameters and variables in use per job. (active batch)

User Interface

All-in-One integrated Admin Interface designed for ease of use

- One stop shop application to create and monitor the applications or at least 2 applications max (1 for each tool) (active batch company x)
- 2 part Monitoring and scheduling system applications

Command Line Interface

- A command line interface for rapid interaction or debugging ($U)

Cross Platform Command Line (ABATCMD)

- Ability to use command line across all platforms supported ($U)

Daily Activity View

- Ability to view the live schedules running that day at that point in time with live status and feedback (company x)

Multiple schedule view via 1 application instance

- Ability to view any schedule via 1 instance through a filter, this will reduce the windows open on the monitoring team (company x)

Operator Automation Run book

- Ability to view the run book (listed view) of jobs for each schedule out with the application (company x)

Web Interface for use as a Thin Client

- Ability for the application to be used on a client and accessed remotely from any client machine (company x)

Variable and parameter options

Parameters can be passes into a job

- Parameters can be defined within a job and called or passed on as required via passing to scripts or dependant jobs. (active batch)

Jobs can pass data to jobs at execution-time

- Ability to pass data from job to job to link each job and process data as required. (BMC)

Variable support to pass data between plans/jobs

- Ability to pass and use variables with changes between jobs and applications (BMC)

Variables can be constants or use various data sources (i.e. WMI, SQL query, etc)

- *Ability to use external variables pre defined by user or program. (company x)*

Variables can be exported to a running job (i.e. environment variables)

- Ability to pass the variable to a jobs which is running (BMC)

Variables can be used to substitute a value for almost any "string" property within a schedule or Job

- Ability to substitute the job line with a variable in order for processing or job control (company x)

3.0 HCI QUIS and Results

3.1 Dollar Universe Results

Dollar Universe QUIS	
Enter your age here:	
Answer Options	Response Count
	12
answered question	12
skipped question	0

Number	Response Date	Response Text
1	03/11/2009 14:31:00	45
2	03/11/2009 14:33:00	22
3	03/11/2009 14:33:00	24
4	03/11/2009 14:37:00	33
5	03/11/2009 16:13:00	26
6	03/11/2009 16:15:00	26
7	03/11/2009 16:23:00	37
8	03/11/2009 16:28:00	24
9	03/11/2009 17:34:00	26
10	03/11/2009 22:08:00	31
11	03/12/2009 00:03:00	26
12	03/12/2009 01:32:00	32

29.33333333

How many years experience have you had with batch scheduling tools:	
Answer Options	Response Count
	12
answered question	12
skipped question	0

Number	Response Date	Response Text
1	03/11/2009 14:31:00	25
2	03/11/2009 14:33:00	2
3	03/11/2009 14:33:00	0
4	03/11/2009 14:37:00	10
5	03/11/2009 16:13:00	2
6	03/11/2009 16:15:00	3
7	03/11/2009 16:23:00	9
8	03/11/2009 16:28:00	3
9	03/11/2009 17:34:00	2
10	03/11/2009 22:08:00	4

11	03/12/2009 00:03:00	7
12	03/12/2009 01:32:00	4

5.916666667

Gender:

Answer Options	Response Frequency	Response Count
Male	100.0%	12
Female	0.0%	0
answered question		12
skipped question		0

How long have you worked with the tool in question?

Answer Options	Response Frequency	Response Count
less than 1 year	8.3%	1
1-2 years	58.3%	7
3-5 years	33.3%	4
5+ years	0.0%	0
answered question		12
skipped question		0

On average, how much time do you spend per week using this tool?

Answer Options	Response Frequency	Response Count
1-10 hours	91.7%	11
10-20 hours	0.0%	0
20-30 hours	0.0%	0
30 hours+	8.3%	1
answered question		12
skipped question		0

Have you used any other batch scheduling tools/ systems and if so which?

Answer Options	Response Count
	11
answered question	11
skipped question	1

Number	Response Date	Response Text
1	03/11/2009 14:31:00	cron, autosys, control-m
2	03/11/2009 14:33:00	Control-M
3	03/11/2009 14:37:00	cron, Ctrl M
4	03/11/2009 16:13:00	none

5	03/11/2009 16:15:00	Control M
6	03/11/2009 16:23:00	cron, Control-M
7	03/11/2009 16:28:00	Control-M plus various bespoke scheduling systems
8	03/11/2009 17:34:00	Control M, In house Developed System, Cron
9	03/11/2009 22:08:00	Cron, controlM, pyramid scheduler
10	03/12/2009 00:03:00	control-m, cron, inhouse pyramid scheduler, BRF
11	03/12/2009 01:32:00	Control-M

General view of the tool

Answer Options	Awful									Excellent	N/A	Rating Average	Response Count
Whats is your general opinion of the system overall?	2	0	2	2	4	1	0	0	0	0	0	3.82	11
												answered question	11
												skipped question	1

Working with the tool

Answer Options	Frustrating									Satisfying	N/A	Rating Average	Response Count
How frustrating is the system to use?	5	2	1	1	1	1	0	0	0	0	0	2.45	11
												answered question	11
												skipped question	1

Ease of use

Answer Options	Difficult										Easy	N/A	Rating Average	Response Count
How easy is to tool to use?	1	0	2	2	3	1	1	1	0	0	0	4.64	11	
												answered question	11	
												skipped question	1	

Power of the tool to perform the tasks required

Answer Options	Inadequate Power									Adequate Power	N/A	Rating Average	Response Count
How powerful do you think	1	2	1	0	0	4	2	1	0	0	0	4.91	11

the tool is at performing the task?													
												answered question	11
												skipped question	1

Please enter any additional comments or views regarding the tool here:

Answer Options	Response Count
	4
answered question	4
skipped question	8

Number	Response Date	Response Text
1	03/11/2009 14:31:00	slow
2	03/11/2009 14:34:00	Slow especially when connecting to remote servers.
3	03/11/2009 14:39:00	$Universe is far to slow when deployed in a huge global production environment such as Pyramid
4	03/11/2009 16:29:00	$U has a poorly implemented GUI which severely hampers its usability. The $u chosen paradigm is flawed in places, resulting in the need to create "hacks" to work around shortcommings in the product.

Helpful/ useful Screen layouts

Answer Options	Never									Always	N/A	Rating Average	Response Count
Do you find the screen layouts helpful/ useful?	0	2	4	0	1	1	1	1	1	0	0	4.64	11
												answered question	11
												skipped question	1

Amount of information that is/can be displayed on screen

Answer Options	Inadequate									Adequate	N/A	Rating Average	Response Count
How do you rate the amount of information that is/can be displayed on screen?	1	2	2	2	0	1	1	1	0	1	0	4.55	11
												answered question	11
												skipped question	1

Arrangement of information on screen

Answer Options	Illogical									Logical	N/A	Rating Average	Response Count
How do you find the arrangement of information on screen?	0	2	2	1	1	0	2	1	1	1	0	5.45	11
												answered question	11
												skipped question	1

Ability to navigate between tasks

Answer Options	Impossible									Easy	N/A	Rating Average	Response Count
How do you rate the ability to move between different tasks within the tool?	0	3	2	2	0	1	2	1	0	0	0	4.36	11
												answered question	11
												skipped question	1

Please enter any other comments regarding the tools screen layout/ interface here:

Answer Options	Response Count
	3
answered question	3
skipped question	9

Number	Response Date	Response Text
1	03/11/2009 14:40:00	Not enough previous execution history displayed
2	03/11/2009 16:31:00	The interface has not been designed with any consideration of usability. The approach has clearly been to drop data on screen hap-hazardly.
3	03/12/2009 00:09:00	Non-intuitive naming of sections e.g DEVELOPMENT (for configurations) / PRODUCTION (for runtime). And further breakdown into Application/Production sections yet again in the treeview on the left is confusing. Moving between Uproc/Task/Execution sections takes a long time across the globe. Filters are not straight forward to use. No visible flow for sessions and job dependencies. Graphical job monitor drawing mode is completely useless, once you zoom in, you can't zoom back out. Tree view does work well for navigation, but there are far too many sections that could be more self-descriptive.

Use of terminology throughout system

Answer Options	Inconsistent									Consistent	N/A	Rating Average	Response Count
How do you find the use terminology throughout system?	2	0	2	0	0	0	3	2	1	1	0	5.82	11
answered question													11
skipped question													1

Batch Scheduling related terminology

Answer Options	Frequent									Infrequent	N/A	Rating Average	Response Count
How often is Batch Scheduling related terminology used throughout the system?	1	3	2	0	0	0	2	3	0	0	0	4.64	11
											answered question		11
											skipped question		1

On Screen Terminology

Answer Options	Ambiguous									Precise	N/A	Rating Average	Response Count
How do you rate the on screen terminology?	1	0	1	0	1	1	3	3	0	1	0	6.36	11
											answered question		11
											skipped question		1

On Screen Messages

Answer Options	Confusing									Clear	N/A	Rating Average	Response Count
How do you rate on screen messages?	1	0	3	1	1	0	1	4	0	0	0	5.27	11
											answered question		11
											skipped question		1

Position of instructions on the screen

Answer Options	Inconsistent									Consistent	N/A	Rating Average	Response Count
How do you feel about the position of instructions on the screen?	1	0	1	1	1	0	3	3	0	0	1	5.80	11
											answered question		11
											skipped question		1

Instructions for commands or functions													
Answer Options	Confusing									Clear	N/A	Rating Average	Response Count
How do you rate instructions for commands or functions?	0	2	2	2	1	1	2	1	0	0	0	4.64	11
											answered question		11
											skipped question		1

Instructions for correcting errors													
Answer Options	Confusing									Clear	N/A	Rating Average	Response Count
How do you rate the instructions for correcting errors?	3	1	1	2	1	0	3	0	0	0	0	3.82	11
											answered question		11
											skipped question		1

Length of delay between operation

Answer Options	Unacceptable									Acceptable	N/A	Rating Average	Response Count
How do you feel about the length of delay between operations?	2	3	2	1	0	1	1	0	0	1	0	3.73	11
											answered question		11
											skipped question		1

Error messages

Answer Options	Unhelpful									Helpful	N/A	Rating Average	Response Count
How do you rate error messages?	1	4	1	2	1	0	1	1	0	0	0	3.64	11
											answered question		11
											skipped question		1

Do you think error messages clarify the problem?

Answer Options	Never									Always	N/A	Rating Average	Response Count
How well do you think error messages clarify the problem?	0	3	2	1	3	1	1	0	0	0	0	4.00	11
											answered question		11
											skipped question		1

Please enter any other comments regarding the terminology and information here:

Answer Options	Response Count
	4
answered question	4
skipped question	8

Number	Response Date	Response Text
1	03/11/2009 14:43:00	Error msgs pretty much just point you to look at a logfile which is no different from cron. Naming conventions for jobs are too restrictive, although $U is not alon here !
2	03/11/2009 16:27:00	The product is French and there is a lot a french terminology/language used - particularly with the command line utility
3	03/11/2009 16:36:00	There are no instructions for correcting errors. The software has been coded in a very optimistic fashion -- failures are unexpected by this software and are not handled gracefully. The terminology present in some error messages can require a bit of "orsyp" type thinking to analyse the real issue.
4	03/12/2009 00:14:00	Some error messages are in French. Some error messages give a rough idea of what the problem is, but don't really offer any solutions. Unacceptable delay when updating tasks. Some functions are incorrect such as right-clicking to enable/disable a task doesn't always work. This has to be done through right-clicking and clicking on update and then checking/unchecking the enabled box for it to work.

Learning to operate the system

Answer Options	Difficult									Easy	N/A	Rating Average	Response Count
How difficult do you think it is learning to operate the system?	1	0	0	3	2	0	2	3	0	0	0	5.55	11
											answered question		11
											skipped question		1

Getting started

Answer Options	Difficult									Easy	N/A	Rating Average	Response Count
How difficult is it learning the basics?	1	0	0	0	1	1	4	3	0	1	0	6.73	11
											answered question		11
											skipped question		1

Learning advanced features

Answer Options	Difficult									Easy	N/A	Rating Average	Response Count
How difficult is it to learn advanced features?	1	1	1	1	4	1	1	1	0	0	0	4.64	11
											answered question		11
											skipped question		1

Time to learn to use the system

Answer Options	Slow									Fast	N/A	Rating Average	Response Count
How quick is the learning period?	0	1	0	1	3	2	1	1	2	0	0	6.00	11
											answered question		11
											skipped question		1

Exploration of features by trial and error

Answer Options	Discouraging									Encouraging	N/A	Rating Average	Response Count
How do you rate the ability to explore features using trial and error?	1	1	3	1	1	2	0	2	0	0	0	4.45	11
											answered question		11
											skipped question		1

Exploration of features

Answer Options	Risky									Safe	N/A	Rating Average	Response Count
How do you rate the ability to explore the features?	1	2	4	0	1	2	0	1	0	0	0	3.82	11
											answered question		11
											skipped question		1

Remembering names and use of commands

Answer Options	Difficult									Easy	N/A	Rating Average	Response Count
How difficult do you find remembering names and use of commands?	1	1	1	0	4	1	1	2	0	0	0	5.00	11
											answered question		11
											skipped question		1

Tasks can be performed in a straight-forward manner

Answer Options	Never									Always	N/A	Rating Average	Response Count
Do you feel tasks can be performed in a straight-forward manner?	0	3	1	1	2	1	1	2	0	0	0	4.73	11
											answered question		11
											skipped question		1

Number of steps per task

Answer Options	Too Many									Just Right	N/A	Rating Average	Response Count
How do you feel about the number of steps per task?	3	0	3	0	2	1	1	1	0	0	0	3.91	11
											answered question		11
											skipped question		1

Steps to complete a task follow a logical sequence

Answer Options	Never									Always	N/A	Rating Average	Response Count
Do you feel the steps to complete a task follow a logical sequence?	0	0	3	2	1	1	1	3	0	0	0	5.36	11
												answered question	11
												skipped question	1

Please enter any further comments regarding the learning of the tool here:

Answer Options	Response Count
	2
answered question	2
skipped question	10

Number	Response Date	Response Text
1	03/11/2009 16:41:00	When creating / modifying / deleting one job at a time, the proces is artificially long but it works. However, there is no recognition within the tool of the need to perform these actions for multiple jobs. The result is repetitive requirements on the operator to manually input / amend details job by job. This does not scale past 10 jobs. It is horrible for the 100-200 jobs we update a time in response to business changes / demands / growth.
2	03/12/2009 00:16:00	It is not intuitive at all due to bad naming. For a newstarter, this would be almost impossible without any training. Could do with less steps per task, or a more logical flow for creating scheduled jobs.

Response time for most operations

Answer Options	Too Slow									Fast Enough	N/A	Rating Average	Response Count
How do you rate the response time for most operations?	4	2	0	1	1	1	1	0	0	0	0	3.00	10
											answered question		10
											skipped question		2

The system is reliable

Answer Options	Never									Always	N/A	Rating Average	Response Count
Do you feel the system is reliable?	0	1	1	2	2	0	2	2	0	0	0	5.30	10
											answered question		10
											skipped question		2

Operations are

Answer Options	Undependable									Dependable	N/A	Rating Average	Response Count
How do you rate the operations?	0	0	0	2	2	0	2	1	0	2	0	6.67	9
											answered question		9
											skipped question		3

System failures occur

Answer Options	Frequently									Seldom	N/A	Rating Average	Response Count
How often do failures occur?	0	0	2	0	1	1	2	2	1	1	0	6.60	10
											answered question		10
											skipped question		2

Correcting your mistakes

Answer Options	Difficult									Easy	N/A	Rating Average	Response Count
How difficult is it to correct mistakes?	1	2	1	1	0	1	2	1	0	1	0	5.00	10
											answered question		10
											skipped question		2

Ability to undo operations

Answer Options	Difficult									Easy	N/A	Rating Average	Response Count
How difficult is it to undo operations?	2	1	2	2	1	0	1	0	0	1	0	4.00	10
											answered question		10
											skipped question		2

You can accomplish tasks knowing only a few commands													
Answer Options	With Difficulty									Easily	N/A	Rating Average	Response Count
Can you accomplish tasks knowing only a few commands?	2	0	2	0	2	1	1	2	0	0	0	4.70	10
answered question													10
skipped question													2

Please enter any additional comments in regards to the tools system capabilities here:	
Answer Options	Response Count
	2
answered question	2
skipped question	10

Number	Response Date	Response Text
1	03/11/2009 16:43:00	The system generally works, in terms of launching jobs on time. It does fail, but allows for monitoring such that we can act when it fails. Outright failure is fairly rare thankfully. Not sure i know what you mean by "How do you rate the operations?" There is no recognition that a human may make an error in the course of operating the software.
2	03/12/2009 00:24:00	Backend processes sometimes hang with no error messages to say why. A simple shutdown / startup fixes this, but the root cause can never be found. Sometimes to correct a configuration error, the entire uproc/task needs to be re-created instead of being able to update. No ability to undo operations. Need to know the full flow to be able to accomplish a task, adhoc tools to query the $u tables have been written to work around this. The command line interface is non-intuitive, naming of commands is not ideal, so wrapper scripts have been written inhouse to make these more useable also.

Please enter any feedback or additional comments here:

Answer Options	Response Count
	3
answered question	3
skipped question	9

Number	Response Date	Response Text
1	03/11/2009 16:44:00	$u sucks ass.
2	03/11/2009 17:39:00	$U is a stable tool, but the environment in which I use it is an extremley demanding production environment, and therefore it falls short in regard to configuring complex dependencies and the interface is oftern slow to respond.
3	03/12/2009 00:27:00	It's a poor product with a badly written front-end, something a university student could probably put together (visual basic 6??). When one tries to accomplish a task in $u, they're never really sure if it has been done correctly.

3.2 Control-M Results

Control M QUIS	
Enter your age here:	
Answer Options	Response Count
	17
answered question	17
skipped question	0

Number	Response Date	Response Text
1	03/02/2009 17:30:00	21
2	03/11/2009 13:17:00	32
3	03/11/2009 13:36:00	25
4	03/11/2009 13:38:00	21
5	03/11/2009 13:55:00	35
6	03/11/2009 14:06:00	23
7	03/11/2009 14:16:00	38
8	03/11/2009 14:50:00	34
9	03/11/2009 15:36:00	90
10	03/11/2009 22:13:00	32
11	03/12/2009 05:07:00	28
12	03/12/2009 17:47:00	26
13	03/13/2009 06:52:00	28
14	03/13/2009 07:08:00	28
15	03/13/2009 07:28:00	22
16	03/13/2009 10:29:00	29
17	03/16/2009 13:07:00	33
		32.05882353

How many years experience have you had with batch scheduling tools:	
Answer Options	Response Count
	17
answered question	17
skipped question	0

Number	Response Date	Response Text
1	03/02/2009 17:30:00	1
2	03/11/2009 13:17:00	6
3	03/11/2009 13:36:00	1
4	03/11/2009 13:38:00	1
5	03/11/2009 13:55:00	15
6	03/11/2009 14:06:00	2
7	03/11/2009 14:16:00	5

8	03/11/2009 14:50:00	4
9	03/11/2009 15:36:00	6
10	03/11/2009 22:13:00	10
11	03/12/2009 05:07:00	3
12	03/12/2009 17:47:00	3
13	03/13/2009 06:52:00	4
14	03/13/2009 07:08:00	2
15	03/13/2009 07:28:00	6
16	03/13/2009 10:29:00	5
17	03/16/2009 13:07:00	2

4.470588235

Gender:

Answer Options	Response Frequency	Response Count
Male	88.2%	15
Female	11.8%	2
answered question		17
skipped question		0

How long have you worked with the tool in question?

Answer Options	Response Frequency	Response Count
less than 1 year	70.6%	12
1-2 years	11.8%	2
3-5 years	5.9%	1
5+ years	11.8%	2
answered question		17
skipped question		0

On average, how much time do you spend per week using this tool?

Answer Options	Response Frequency	Response Count
1-10 hours	52.9%	9
10-20 hours	11.8%	2
20-30 hours	11.8%	2
30 hours+	23.5%	4
answered question		17
skipped question		0

Have you used any other batch scheduling tools/ systems and if so which?	
Answer Options	Response Count
	16
answered question	16
skipped question	1

Number	Response Date	Response Text
1	03/11/2009 13:17:00	$universe
2	03/11/2009 13:36:00	$Universe
3	03/11/2009 13:38:00	a little bit of cron
4	03/11/2009 13:55:00	atd, cron, autosys
5	03/11/2009 14:06:00	$Universe
6	03/11/2009 14:16:00	Crontab, $Universe
7	03/11/2009 14:50:00	Dollar Universe
8	03/11/2009 15:36:00	$UNIVERSE, cron, Autosys
9	03/11/2009 22:13:00	Yes, Autosys, Cron, TWS
10	03/12/2009 05:07:00	Dollar Universe, Crontab
11	03/12/2009 17:47:00	cron, $Universe, Quartz
12	03/13/2009 06:52:00	Autosys, cron,$univ
13	03/13/2009 07:08:00	no
14	03/13/2009 07:28:00	No
15	03/13/2009 10:29:00	Autosys
16	03/16/2009 13:07:00	Dollar Universe, Autosys

General view of the tool

Answer Options	Awful									Excellent	N/A	Rating Average	Response Count
Whats is your general opinion of the system overall?	0	1	1	1	5	1	4	2	1	1	0	6.06	17
											answered question		17
											skipped question		0

Working with the tool

Answer Options	Frustrating									Satisfying	N/A	Rating Average	Response Count
How frustrating is the system to use?	0	2	2	1	2	2	3	1	1	3	0	6.12	17
											answered question		17
											skipped question		0

Ease of use

Answer Options	Difficult									Easy	N/A	Rating Average	Response Count
How easy is to tool to use?	0	1	2	1	2	2	2	3	2	2	0	6.47	17
											answered question		17
											skipped question		0

Power of the tool to perform the tasks required

Answer Options	Inadequate Power									Adequate Power	N/A	Rating Average	Response Count
How powerful do you think the tool is at performing the task?	0	1	2	1	1	0	3	1	5	3	0	7.12	17
												answered question	17
												skipped question	0

Please enter any additional comments or views regarding the tool here:

Answer Options	Response Count
	9
answered question	9
skipped question	8

Number	Response Date	Response Text
1	03/11/2009 13:17:00	very good tool for developing and testing schedules
2	03/11/2009 13:42:00	The tools seems to be quite heavy in terms of consuming the system resources.(cannot keep the locally installed version (EM particularly) open for more than an hour or two) Has quite nice easy to understand interface.
3	03/11/2009 13:59:00	Multithreading support is weak Uses centralized scheduling rather than distributed, which limits tools scalability BMC has many good ideas, implementation however is very poor There are many assumptions made in the tool implementation that simply are invalid for a large organization. I would say the tool is a OK for a small business, no more than a couple hundred agents.
4	03/11/2009 14:22:00	From experience, CtM enables a developper to create schedules in a very short time period, extremely important in JPM's fast-moving environment. Also, the diagramatic layout detailing the dependencies in a 'waterfall' form provides the tool with a user-friendly interface and a quick tool of reference. CtM is fit-for-purpose.
5	03/11/200	Very new tool - still to become accustomed to it.

	9 14:51:00	
6	03/11/2009 15:42:00	To edit jobs is very difficult since the normal "tab and hop allong entry fields" is not working consistent accross the mask. Testing the jobs is very time consuming to have to coordinate with other AD teams, reconfigure/update/upload xml files according to the DEV/QA configuration. The man hours required to get a job into CONTROL-M(versus $UNIVERSE): coordinating XML files to different teams before a release, the amount of time used on ECMS tickets (which AD teams did not have to deal before).
7	03/11/2009 22:15:00	From an end-user perspective, this tool is pretty powerful and not so terribly frustrating. It is absolutely brutal to administer, however.
8	03/13/2009 10:34:00	There are some features which are not supported by control-m like executing the jobs in different timezones. This has caused an impact in our feeds
9	03/16/2009 13:09:00	The tool is very "Operate" centric, and isn't designed to be used by AD teams for constant update and refining of schedules. For example, the need to delete in/out conditions every time you upload schedules to ensure condition lines don't go across to old schedules.

Helpful/ useful Screen layouts

Answer Options	Never									Always	N/A	Rating Average	Response Count
Do you find the screen layouts helpful/ useful?	0	1	3	0	0	2	3	2	3	2	0	6.69	16
												answered question	16
												skipped question	1

Amount of information that is/can be displayed on screen

Answer Options	Inadequate									Adequate	N/A	Rating Average	Response Count
How do you rate the amount of information that is/can be displayed on screen?	1	0	2	2	3	2	0	1	3	2	0	6.06	16
												answered question	16
												skipped question	1

Arrangement of information on screen

Answer Options	Illogical									Logical	N/A	Rating Average	Response Count
How do you find the arrangement of information on screen?	0	0	3	0	1	2	3	2	2	3	0	6.94	16
												answered question	16
												skipped question	1

Ability to navigate between tasks

Answer Options	Impossible									Easy	N/A	Rating Average	Response Count
How do you rate the ability to move between different tasks within the tool?	0	0	0	3	3	3	0	2	2	3	0	6.81	16
												answered question	16
												skipped question	1

Please enter any other comments regarding the tools screen layout/ interface here:

Answer Options	Response Count
	7
answered question	7
skipped question	10

Number	Response Date	Response Text
1	03/11/2009	Gui is good on the whole , but once open say 5 or 6 apps gets crowded

	13:18:00	
2	03/11/2009 13:45:00	find it quite difficult to navigate between jobs if you are ,especially if you need to find out how the dependency between two jobs are setup
3	03/11/2009 14:05:00	It is not bad in general, however, again, there were some assumptions made that are simply not very good. Some common tasks require too many clicks, certain tasks require a whole different tool, installation of which is drastically different from the rest. My biggest issues with GUI is it's poor performance, which again goes back to implementation.
4	03/11/2009 14:52:00	Display of information is poor. e.g. text for job names is too large and so doesn't fit in the display boxes. Unaware of ability to change it.
5	03/11/2009 15:44:00	The naming convention used is truncated in the flow charts, working on the left hand tree navigation requires to open properties to identify cronological orders which confuses the user audience.
6	03/11/2009 22:15:00	The interface is the nicest I've seen for any scheduling tool.
7	03/16/2009 13:11:00	The tool could be more dynamic - e.g. "bubble help" when doing a mouse-over on jobs.

Use of terminology throughout system

Answer Options	Inconsistent									Consistent	N/A	Rating Average	Response Count
How do you find the use terminology throughout system?	1	1	1	0	1	1	2	1	5	3	0	7.13	16
												answered question	16
												skipped question	1

Batch Scheduling related terminology

Answer Options	Frequent									Infrequent	N/A	Rating Average	Response Count
How often is Batch Scheduling related terminology used throughout the system?	4	0	3	1	1	4	1	0	1	0	1	4.13	16
												answered question	16
												skipped question	1

On Screen Terminology													
Answer Options	Ambiguous									Precise	N/A	Rating Average	Response Count
How do you rate the on screen terminology?	1	0	0	4	1	2	0	4	4	0	0	6.38	16
											answered question		16
											skipped question		1

On Screen Messages													
Answer Options	Confusing									Clear	N/A	Rating Average	Response Count
How do you rate on screen messages?	1	1	0	2	2	2	2	2	2	2	0	6.31	16
											answered question		16
											skipped question		1

Position of instructions on the screen													
Answer Options	Inconsistent									Consistent	N/A	Rating Average	Response Count
How do you feel about the position of instructions on the screen?	0	0	0	2	1	4	0	4	3	1	1	7.07	16
											answered question		16
											skipped question		1

Instructions for commands or functions

Answer Options	Confusing									Clear	N/A	Rating Average	Response Count
How do you rate instructions for commands or functions?	1	0	0	2	3	3	0	3	0	2	1	6.14	15
											answered question		15
											skipped question		2

Instructions for correcting errors

Answer Options	Confusing									Clear	N/A	Rating Average	Response Count
How do you rate the instructions for correcting errors?	0	1	1	2	2	3	1	3	1	2	0	6.31	16
											answered question		16
											skipped question		1

Length of delay between operation

Answer Options	Unacceptable									Acceptable	N/A	Rating Average	Response Count
How do you feel about the length of delay between operations?	0	1	4	0	0	2	2	1	3	3	0	6.56	16
											answered question		16
											skipped question		1

Error messages

Answer Options	Unhelpful									Helpful	N/A	Rating Average	Response Count
How do you rate error messages?	3	1	1	0	3	1	2	2	1	2	0	5.50	16
												answered question	16
												skipped question	1

Do you think error messages clarify the problem?

Answer Options	Never									Always	N/A	Rating Average	Response Count
How well do you think error messages clarify the problem?	1	0	1	3	3	2	2	2	2	0	0	5.69	16
												answered question	16
												skipped question	1

Please enter any other comments regarding the terminology and information here:

Answer Options	Response Count
	3
answered question	3
skipped question	14

Number	Response Date	Response Text
1	03/11/2009 14:09:00	Database errors are not passed through to the GUI, which means that frequently the error messages simply tell that something did not work, but there are no references to why. This makes extending the tool properly quite hard.
2	03/11/2009 14:31:00	On the 'Job Editing form' the box "Over Lib:" has a remote meaning to the end user. See also "Doc Mem" and "Doc Lib"

3	03/16/2009 13:13:00	Depending on if you are in the EM, or the desktop, the quality of error messages differs considerably.

Learning to operate the system

Answer Options	Difficult									Easy	N/A	Rating Average	Response Count
How difficult do you think it is learning to operate the system?	0	0	2	1	1	2	1	3	2	4	0	7.25	16
												answered question	16
												skipped question	1

Getting started

Answer Options	Difficult									Easy	N/A	Rating Average	Response Count
How difficult is it learning the basics?	0	0	1	2	1	2	3	0	2	5	0	7.31	16
												answered question	16
												skipped question	1

Learning advanced features

Answer Options	Difficult									Easy	N/A	Rating Average	Response Count
How difficult is it to learn advanced features?	1	0	2	4	1	3	2	2	1	0	0	5.31	16
												answered question	16
												skipped question	1

Time to learn to use the system

Answer Options	Slow									Fast	N/A	Rating Average	Response Count
How quick is the learning period?	0	0	3	2	0	2	3	3	3	0	0	6.31	16
											answered question		16
											skipped question		1

Exploration of features by trial and error

Answer Options	Discouraging									Encouraging	N/A	Rating Average	Response Count
How do you rate the ability to explore features using trial and error?	1	0	1	1	0	2	4	3	1	2	1	6.73	16
											answered question		16
											skipped question		1

Exploration of features

Answer Options	Risky									Safe	N/A	Rating Average	Response Count
How do you rate the ability to explore the features?	0	0	2	0	1	4	2	2	1	4	0	7.13	16
											answered question		16
											skipped question		1

Remembering names and use of commands

Answer Options	Difficult									Easy	N/A	Rating Average	Response Count
How difficult do you find remembering names and use of commands?	0	2	1	1	0	1	1	3	3	3	1	7.00	16
											answered question		16
											skipped question		1

Tasks can be performed in a straight-forward manner

Answer Options	Never									Always	N/A	Rating Average	Response Count
Do you feel tasks can be performed in a straight-forward manner?	0	0	1	1	2	1	5	4	1	1	0	6.81	16
											answered question		16
											skipped question		1

Number of steps per task

Answer Options	Too Many									Just Right	N/A	Rating Average	Response Count
How do you feel about the number of steps per task?	2	0	0	1	2	2	2	2	2	2	1	6.40	16
											answered question		16
											skipped question		1

Steps to complete a task follow a logical sequence

Answer Options	Never									Always	N/A	Rating Average	Response Count
Do you feel the steps to complete a task follow a logical sequence?	0	0	0	3	1	0	3	3	5	0	1	7.13	16
												answered question	16
												skipped question	1

Please enter any further comments regarding the learning of the tool here:

Answer Options	Response Count
	2
answered question	2
skipped question	15

Number	Response Date	Response Text
1	03/11/2009 13:21:00	Tool is easy to pick up , but takes a while to master al lthe more advanced functions
2	03/16/2009 13:16:00	The learning curve for Control-M is much steeper than it needs to be. Simply creating a job that runs at a certain tme of the day should be a 10 minute job. If the user is new to the system, there's so much to configure that this isn't possible.

Response time for most operations

Answer Options	Too Slow									Fast Enough	N/A	Rating Average	Response Count
How do you rate the response time for most operations?	0	0	3	2	2	2	2	2	1	2	0	6.13	16
											answered question		16
											skipped question		1

The system is reliable

Answer Options	Never									Always	N/A	Rating Average	Response Count
Do you feel the system is reliable?	0	0	1	0	0	1	4	6	1	2	0	7.60	15
											answered question		15
											skipped question		2

Operations are

Answer Options	Undependable									Dependable	N/A	Rating Average	Response Count
How do you rate the operations?	0	0	1	0	1	1	1	6	2	3	1	7.80	16
											answered question		16
											skipped question		1

System failures occur

Answer Options	Frequently									Seldom	N/A	Rating Average	Response Count
How often do failures occur?	0	1	3	1	1	0	1	3	3	2	1	6.53	16
											answered question		16
											skipped question		1

Correcting your mistakes

Answer Options	Difficult									Easy	N/A	Rating Average	Response Count
How difficult is it to correct mistakes?	3	0	1	2	1	1	0	5	1	1	1	5.60	16
											answered question		16
											skipped question		1

Ability to undo operations

Answer Options	Difficult									Easy	N/A	Rating Average	Response Count
How difficult is it to undo operations?	5	1	1	2	0	0	1	4	1	0	1	4.40	16
											answered question		16
											skipped question		1

You can accomplish tasks knowing only a few commands													
Answer Options	With Difficulty									Easily	N/A	Rating Average	Response Count
Can you accomplish tasks knowing only a few commands?	0	0	2	2	1	2	1	3	4	1	0	6.75	16
answered question													16
skipped question													1

Please enter any additional comments in regards to the tools system capabilities here:	
Answer Options	Response Count
	4
answered question	4
skipped question	13

Number	Response Date	Response Text
1	03/11/2009 13:52:00	Quite annoying that even for even a small change to the schedule we have to go through a complete upload of the new schedule. Would be quite useful if we have a feature to change time ,diable a job etc directly in Control M server for all the re occurences of the schedule with out uploading a new schedule to the server
2	03/11/2009 14:12:00	My views are based on admin experiences, which could be different when looking from the regular scheduler perspective.
3	03/11/2009 14:56:00	Only been using system for 1-2 months - however, no system issues in that time.
4	03/16/2009 13:17:00	"Undoing" mistakes isn't easy if you have lots of jobs with in and out conditions....

Please enter any feedback or additional comments here:

Answer Options	Response Count
	8
answered question	8
skipped question	9

Number	Response Date	Response Text
1	03/11/2009 13:55:00	Quite nice experince using the tool so far.powerful as well. A distinct advantage being ,you get an overall status of the application that you are running looking at the Control M GUI. needs improvement in few areas such as saving the schedule(the green tick mark to save your conditions, tag etc is annoying) ,
2	03/11/2009 14:15:00	I dislike the tool, as I had said before, they have good ideas, but, the implementation is very much lacking. The tool must be distributed for large scalability, the tool should be developed in open source model for reliability and extendability. I would not recommend this tool for others, however, I do not have any good recommendation for a replacement.
3	03/11/2009 14:38:00	A good overall tool that enables the end-user or developper to quickly get up to speed in operational terms.
4	03/11/2009 14:56:00	I believe that exposure to the system will allow familiarity, and then a few of the ticks in the survey can move up one or two places.
5	03/11/2009 22:18:00	My answers may be a bit biased since I am an administrator and not a scheduler. I use the tool in a manner that most users never see.
6	03/12/2009 05:10:00	Excellent tool to use
7	03/12/2009 17:53:00	The tools I have used for batch scheduling all were dependable. The problem tends to be ability to test things and the UX issues. The UX in the tools I've used have all been horrendous.
8	03/16/2009 13:18:00	While Control-M might be a good reliable tool, the learning curve is far too steep. Also, the tool itself is aimed too closely with an Operate team in mind, rather than application developers.

3.3 AutoSys Results

Autosys QUIS	
Enter your age here:	
Answer Options	Response Count
	7
answered question	7
skipped question	0

Number	Response Date	Response Text
1	03/18/2009 18:09:00	51
2	03/18/2009 18:55:00	41
3	03/18/2009 19:19:00	42
4	03/18/2009 19:31:00	29
5	03/18/2009 19:39:00	32
6	03/18/2009 19:43:00	45
7	03/24/2009 17:09:00	36

39.42857143

How many years experience have you had with batch scheduling tools:	
Answer Options	Response Count
	7
answered question	7
skipped question	0

Number	Response Date	Response Text
1	03/18/2009 18:09:00	15
2	03/18/2009 18:55:00	10
3	03/18/2009 19:19:00	20
4	03/18/2009 19:31:00	7
5	03/18/2009 19:39:00	5
6	03/18/2009 19:43:00	12
7	03/24/2009 17:09:00	9

11.14285714

Gender:		
Answer Options	Response Frequency	Response Count
Male	71.4%	5
Female	28.6%	2

answered question	7
skipped question	0

How long have you worked with the tool in question?

Answer Options	Response Frequency	Response Count
less than 1 year	0.0%	0
1-2 years	0.0%	0
3-5 years	14.3%	1
5+ years	85.7%	6
answered question		7
skipped question		0

On average, how much time do you spend per week using this tool?

Answer Options	Response Frequency	Response Count
1-10 hours	14.3%	1
10-20 hours	0.0%	0
20-30 hours	28.6%	2
30 hours+	57.1%	4
answered question		7
skipped question		0

Have you used any other batch scheduling tools/ systems and if so which?

Answer Options	Response Count
	7
answered question	7
skipped question	0

Number	Response Date	Response Text
1	03/18/2009 18:09:00	Control-M, JAWS
2	03/18/2009 18:55:00	Control-M
3	03/18/2009 19:19:00	CA-7, Robot, Maestro, Control-M
4	03/18/2009 19:31:00	Autosys, Control-M, JCL. ZEKE/ZEBB
5	03/18/2009 19:39:00	controlm, task scheduler, cron
6	03/18/2009 19:43:00	yes
7	03/24/2009 17:09:00	Control M

General view of the tool													
Answer Options	Awful									Excellent	N/A	Rating Average	Response Count
Whats is your general opinion of the system overall?	0	0	0	1	0	0	3	2	0	1	0	7.29	7
answered question													7
skipped question													0

Working with the tool													
Answer Options	Frustrating									Satisfying	N/A	Rating Average	Response Count
How frustrating is the system to use?	0	0	1	0	0	1	0	2	1	2	0	7.71	7
answered question													7
skipped question													0

Ease of use													
Answer Options	Difficult									Easy	N/A	Rating Average	Response Count
How easy is to tool to use?	0	0	0	0	0	2	0	1	3	1	0	8.14	7
answered question													7
skipped question													0

Power of the tool to perform the tasks required

Answer Options	Inadequate Power									Adequate Power	N/A	Rating Average	Response Count
How powerful do you think the tool is at performing the task?	0	1	0	0	0	0	2	3	0	1	0	7.14	7
												answered question	7
												skipped question	0

Please enter any additional comments or views regarding the tool here:

Answer Options	Response Count
	1
answered question	1
skipped question	6

Number	Response Date	Response Text
1	03/18/2009 18:57:00	Calendar needs enhancement to enable rule-based schedules.

Helpful/ useful Screen layouts

Answer Options	Never									Always	N/A	Rating Average	Response Count
Do you find the screen layouts helpful/ useful?	0	0	0	1	0	0	2	2	1	1	0	7.57	7
												answered question	7
												skipped question	0

Amount of information that is/can be displayed on screen

Answer Options	Inadequate									Adequate	N/A	Rating Average	Response Count
How do you rate the amount of information that is/can be displayed on screen?	0	0	1	0	1	1	0	1	2	1	0	7.14	7
												answered question	7
												skipped question	0

Ability to navigate between tasks

Answer Options	Impossible									Easy	N/A	Rating Average	Response Count
How do you rate the ability to move between different tasks within the tool?	1	0	0	0	0	1	3	0	0	2	0	6.86	7
												answered question	7
												skipped question	0

Please enter any other comments regarding the tools screen layout/ interface here:

Answer Options	Response Count
	1
answered question	1
skipped question	6

Number	Response Date	Response Text
1	03/18/2009 19:40:00	very heavy. un-organized

Use of terminology throughout system													
Answer Options	Inconsistent									Consistent	N/A	Rating Average	Response Count
How do you find the use terminology throughout system?	0	1	0	0	0	0	0	3	0	3	0	8.00	7
											answered question		7
											skipped question		0

Batch Scheduling related terminology													
Answer Options	Frequent									Infrequent	N/A	Rating Average	Response Count
How often is Batch Scheduling related terminology used throughout the system?	0	1	0	0	0	0	3	2	0	0	1	6.50	7
											answered question		7
											skipped question		0

On Screen Terminology													
Answer Options	Ambiguous									Precise	N/A	Rating Average	Response Count
How do you rate the on screen terminology?	0	0	0	0	1	0	1	2	1	2	0	8.14	7
											answered question		7
											skipped question		0

On Screen Messages

Answer Options	Confusing									Clear	N/A	Rating Average	Response Count
How do you rate on screen messages?	0	0	0	0	1	1	0	4	0	1	0	7.57	7
											answered question		7
											skipped question		0

Position of instructions on the screen

Answer Options	Inconsistent									Consistent	N/A	Rating Average	Response Count
How do you feel about the position of instructions on the screen?	0	0	0	0	2	1	3	0	0	1	0	6.71	7
											answered question		7
											skipped question		0

Instructions for commands or functions

Answer Options	Confusing									Clear	N/A	Rating Average	Response Count
How do you rate instructions for commands or functions?	0	0	0	1	0	4	0	1	0	1	0	6.57	7
											answered question		7
											skipped question		0

Instructions for correcting errors

Answer Options	Confusing									Clear	N/A	Rating Average	Response Count
How do you rate the instructions for correcting errors?	1	0	0	2	0	0	1	2	0	1	0	6.00	7
											answered question		7
											skipped question		0

Length of delay between operation

Answer Options	Unacceptable									Acceptable	N/A	Rating Average	Response Count
How do you feel about the length of delay between operations?	0	0	0	2	1	0	1	2	1	0	0	6.43	7
											answered question		7
											skipped question		0

Error messages

Answer Options	Unhelpful									Helpful	N/A	Rating Average	Response Count
How do you rate error messages?	1	0	1	1	1	0	1	1	1	0	0	5.29	7
											answered question		7
											skipped question		0

Do you think error messages clarify the problem?

Answer Options	Never									Always	N/A	Rating Average	Response Count
How well do you think error messages clarify the problem?	0	0	3	1	0	0	0	3	0	0	0	5.29	7
												answered question	7
												skipped question	0

Please enter any other comments regarding the terminology and information here:

Answer Options	Response Count
	0
answered question	0
skipped question	7

Learning to operate the system

Answer Options	Difficult									Easy	N/A	Rating Average	Response Count
How difficult do you think it is learning to operate the system?	0	0	0	1	0	0	0	3	1	2	0	8.14	7
												answered question	7
												skipped question	0

Getting started

Answer Options	Difficult									Easy	N/A	Rating Average	Response Count
How difficult is it learning the basics?	0	0	0	0	0	0	1	2	2	2	0	8.71	7
											answered question		7
											skipped question		0

Learning advanced features

Answer Options	Difficult									Easy	N/A	Rating Average	Response Count
How difficult is it to learn advanced features?	0	0	0	1	0	2	1	2	0	1	0	7.00	7
											answered question		7
											skipped question		0

Time to learn to use the system

Answer Options	Slow									Fast	N/A	Rating Average	Response Count
How quick is the learning period?	0	0	0	2	0	1	1	2	1	0	0	6.57	7
											answered question		7
											skipped question		0

Exploration of features by trial and error

Answer Options	Discouraging									Encouraging	N/A	Rating Average	Response Count
How do you rate the ability to explore features using trial and error?	0	0	0	1	0	0	2	2	2	0	0	7.43	7
												answered question	7
												skipped question	0

Exploration of features

Answer Options	Risky									Safe	N/A	Rating Average	Response Count
How do you rate the ability to explore the features?	0	0	2	1	0	0	0	3	1	0	0	6.14	7
												answered question	7
												skipped question	0

Remembering names and use of commands

Answer Options	Difficult									Easy	N/A	Rating Average	Response Count
How difficult do you find remembering names and use of commands?	0	1	0	0	0	0	2	3	1	0	0	7.00	7
												answered question	7
												skipped question	0

Tasks can be performed in a straight-forward manner

Answer Options	Never									Always	N/A	Rating Average	Response Count
Do you feel tasks can be performed in a straight-forward manner?	0	0	0	0	0	1	1	3	1	0	0	7.67	6
												answered question	6
												skipped question	1

Number of steps per task

Answer Options	Too Many									Just Right	N/A	Rating Average	Response Count
How do you feel about the number of steps per task?	0	0	1	0	1	1	0	2	2	0	0	6.86	7
												answered question	7
												skipped question	0

Steps to complete a task follow a logical sequence

Answer Options	Never									Always	N/A	Rating Average	Response Count
Do you feel the steps to complete a task follow a logical sequence?	0	1	0	0	0	0	1	3	2	0	0	7.29	7
												answered question	7
												skipped question	0

Please enter any further comments regarding the learning of the tool here:	
Answer Options	Response Count
	0
answered question	0
skipped question	7

Response time for most operations													
Answer Options	Too Slow									Fast Enough	N/A	Rating Average	Response Count
How do you rate the response time for most operations?	0	1	0	3	0	1	1	0	1	0	0	5.14	7
answered question													7
skipped question													0

The system is reliable													
Answer Options	Never									Always	N/A	Rating Average	Response Count
Do you feel the system is reliable?	0	0	0	0	0	1	1	3	1	1	0	8.00	7
answered question													7
skipped question													0

Operations are

Answer Options	Undependable									Dependable	N/A	Rating Average	Response Count
How do you rate the operations?	0	0	0	0	1	0	2	1	2	1	0	7.86	7
											answered question		7
											skipped question		0

System failures occur

Answer Options	Frequently									Seldom	N/A	Rating Average	Response Count
How often do failures occur?	0	0	0	1	1	0	1	1	1	2	0	7.57	7
											answered question		7
											skipped question		0

Correcting your mistakes

Answer Options	Difficult									Easy	N/A	Rating Average	Response Count
How difficult is it to correct mistakes?	0	0	1	0	0	2	2	1	1	0	0	6.57	7
											answered question		7
											skipped question		0

Ability to undo operations

Answer Options	Difficult									Easy	N/A	Rating Average	Response Count
How difficult is it to undo operations?	0	1	1	2	0	0	1	1	1	0	0	5.29	7
												answered question	7
												skipped question	0

You can accomplish tasks knowing only a few commands

Answer Options	With Difficulty									Easily	N/A	Rating Average	Response Count
Can you accomplish tasks knowing only a few commands?	0	0	0	0	0	2	2	1	1	0	0	7.17	6
												answered question	6
												skipped question	1

Please enter any additional comments in regards to the tools system capabilities here:

Answer Options	Response Count
	0
answered question	0
skipped question	7

Please enter any feedback or additional comments here:	
Answer Options	Response Count
	1
answered question	1
skipped question	6

Number	Response Date	Response Text
1	03/18/2009 19:09:00	Best of luck to you. My ratings are based on the GUI side of Autosys since that is what most users handle.

QUIS Example

The following is the AutoSys QUIS which is the exact same as that of Control-M and Dollar Universe the only difference between the QUIS's is the tool which it is assessing. The example is attached overleaf.