Monitoring SysAdmin Manual

Carmen Crew Management System at SAS

Version 1.0,

*Document Type: Monitoring SysAdmin Manual*

*Document Status: FINAL*

*Version:*

*Last Changed: 07Jan10*

*Owner: Robert Tropp, Jeppesen*

Change History

|  |  |  |  |
| --- | --- | --- | --- |
| Version | Author | Date | Description |
| 0.1 | Robert Tropp Larsen | 6Mar09 | Initial draft version. |
| 0.2 | Robert Tropp Larsen | 3Apr09 | Page numbers added. |
| 0.3 | Robert Tropp Larsen | 26Jun09 | Updates after SAS/CSC review. |
| 0.4 | Robert Tropp Larsen | 02Jul09 | Updates after Queue info from CSC |
| 1.0 | Robert Tropp Larsen | 7Jan10 | Updates of queue thresholds, after running in PROD a couple of months. CSC will be asked to set the recommended threshold’s for each MQ queue, from this document. |

# Monitoring & statistics

This chapter will contain the recommended production environment monitoring from Jeppesen. Environment monitoring is often conducted using client specific monitoring software. Jeppesen will do basic monitoring of Carmen CMS components using Desmond.

When indicated we would like an email to the Carmen Service Centre (JS-Sk\_urgent\_alerts). Jeppesen will not take any active actions on any mail sent, unless the client support organization will initiate actions.

*CSC is using TeamQuest as monitor software.*

If possible we have also indicated the errors which we would like to get text messages to a support phone number in Göteborg. Again, Jeppesen will not take any action on information sent unless it is initiated from the client.

*Currently, no support phone number exists at Jeppesen for sending SMS messages. Jeppesen will update this information if/when it becomes available.*

If the client monitoring system allows for gathering statistics, Jeppesen recommends using this for modifying the limits as normal usage gets known. If possible Jeppesen would like to get monthly reports on how the system performs as well as statistics on usage in order to improve sizing and recommendations to other clients.

## Basic environment monitoring

The following table contains basic monitoring to be performed on all hosts in the Linux environments, both production and test environments.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| What | Warning | Critical | Mail | SMS | Monitoring responsible | Comment/Action | CSC answer |
| Server and network availability monitoring (ping monitoring) |  | No response | CPHPG  Jeppesen |  | CSC | Problem ticket to CSC Unix team | YES |
| CPU (per host) Application servers | > 80%, 60 mins | > 95%, 30 mins | CPHPG  Jeppesen |  | CSC | CSC | NO |
| CPU (per host) Only Jeppesen Cluster servers | > 80%, 60 mins | > 95%, 30 mins | CPHPG  Jeppesen |  | CSC | CSC | NO (skal undersøges) |
| CPU (per host) Only CSC Cluster servers | > 80%, 60 mins | > 95%, 30 mins | CPHPG  Jeppesen |  | CSC | CSC | NO (skal undersøges |
| CPU (per host) DB Cluster | > 60%, 20 mins | > 80%, 10 mins | CPHPG  Jeppesen |  | CSC | CSC If one of the nodes in the cluster, is above the limit and the other is not, it indicates SQL tuning, is needed. | NO (skal undersøges |
| CPU All application servers |  | > 50%, 30 mins | CPHPG  Jeppesen |  | CSC | CSC | NO |
| Disc usage (NFS: /opt/Carmen) | > 80% | > 90% | CPHPG  Jeppesen |  | CSC | CSC Local discs applies as well | YES |
| Memory (per machine)  Application Servers | < 2GB | < 0,5GB | CPHPG  Jeppesen |  | CSC | CSC | YES, MONITORING SWAP MEM |
| Memory (per machine)  Jeppesen Cluster | < 4GB | < 02GB | CPHPG  Jeppesen |  | CSC | CSC | DO |
| Memory (per machine)  CSC Cluster | < 1GB | < 0,5GB | CPHPG  Jeppesen |  | CSC | CSC | DO |
| Memory (per machine)  DB Cluster | < 2GB | < 0,5GB | CPHPG  Jeppesen |  | CSC | CSC | DO |
| Memory (any process)  Application Servers | > 3GB | > 4GB | CPHPG  Jeppesen |  | CSC | Manual check needed(CSC) | NO |
| Memory (any process)  Jeppesen Cluster | > 3.5GB | > 4GB | CPHPG  Jeppesen |  | CSC | Manual check needed(CSC) | NO |
| Memory other (std TeamQuest Linux monitoring)   * Available virtual memory is low * Swap space is low * System is thrashing |  |  | CPHPG  Jeppesen |  | CSC | Problem ticket to CSC Unix team.  (SMS sendes til SAS vagten) | YES  Only on cluster |
| Nightly backups of NFS |  | not exec | CPHPG  Jeppesen |  | CSC | CSC | YES |

## Basic Citrix environment monitoring

The following table contains basic monitoring to be performed on all hosts in the Citrix environments, both production and test environments.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| What | Warning | Critical | Mail | SMS | Monitoring responsible | Comment/Action | CSC answer |
| Server and network availability monitoring (ping monitoring) |  | No response | CPHPG  Jeppesen |  | CSC | Problem ticket to CSC Wintel team | YES |
| CPU (per host) Only Carmen Citrix servers | > 80%, 60 mins | > 95%, 30 mins | CPHPG |  | CSC | CSC | YES |
| Disc usage | > 80% | > 90% | CPHPG |  | CSC | CSC Local discs applies as well | YES |
| Memory (per machine)  Carmen Citrix servers | < 1GB | < 0,5GB | CPHPG |  | CSC | CSC | NO (undersøges nærmere) |
| Memory (any process)  Carmen Citrix Servers | > 0,5GB | > 1GB | CPHPG |  | CSC | CSC | NO (skal undersøges nærmere , med frederik) |
| Nightly backups |  | not exec | CPHPG |  | CSC | CSC | YES |

## Database monitoring

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| What | Warning | Critical | Mail | SMS | Monitoring responsible | Comment/Action/Resp. | Csc answer |
| Oracle is alive (listener) |  | not alive | CPHPG  Jeppesen |  | CSC | Restart Oracle, CSC | YES |
| Disc space | < 1GB | < 0,5 GB | CPHPG  Jeppesen |  | CSC | Manual, add disc space, CSC | YES |
| Table space | < 1GB | < 0,5 GB | CPHPG  Jeppesen |  | CSC | Extend table space, CSC | YES |
| Recovery Area  (archive) | > 50% | > 85% | CPHPG  Jeppesen |  | CSC | CSC | YES |
| SGA, PGA  (memory parameter setting) | ? | ? | CPHPG  Jeppesen |  | CSC | CSC | Std. konfigurering  Skal gores permanent  Lars skulle snake  Med sudokai |
| Alert log file | ? | ? | CPHPG  Jeppesen |  | CSC | CSC | Check med DBA  Om hvor tit der  Checkes i alert  Log file |
| Online backups executed |  | Not exec. | CPHPG  Jeppesen |  | CSC | CSC | YES |

## Miscellaneous monitoring

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| What | Warning | Critical | Mail | SMS | Monitoring responsible | Comment/Action | Csc answer |
| Standard Linux process monitoring   * Lcfd * syslogd * xinetd * crond * high zombie process |  |  | CPHPG |  |  | Problem ticket to CSC Unix team | NO (følg op med lars Bølcko, dad et burde standard overvågning) |
| Processes, desmond (Jeppesen Cluster) (Desmond ping or logfile check) |  | not alive | CPHPG  Jeppesen |  | CSC | SAS  Restart Desmond | YES |
| Processes, AlertGenerators (Jeppesen Cluster) (logfile check) | Last write to logfile > 60 sec. | not alive | CPHPG  Jeppesen |  | CSC | SAS  Restart SAS\_ALERT(1-7) | NO (SAS,jeppesen) |
| Processes, ReportServers (Jeppesen Cluster) (logfile check) | Last write to logfile > 10 min. | not alive | CPHPG  Jeppesen |  | CSC | SAS  Restart SAS\_RS\_WORKER\_xxx | NO (SAS,jeppesen) |
| Processes, studio | >90% CPU, 10 minutes |  | CPHPG |  | SAS | Manual, SAS | NO |
| Processes, tomcat5 (Jeppesen Cluster) (SessionServer - Ping) |  | not alive | CPHPG  Jeppesen |  | CSC | Restart tomcat5, CSC | YES |
| Processes, CUPS |  | not alive | CPHPG  Jeppesen |  |  | Restart, CSC | NO (jeppesen  Undersøger) |
| Processes, sge\_execd (not db hosts) | not alive | none alive | CPHPG  Jeppesen |  |  | Restart, CSC | YES |
| Processes, sge\_master (CSC Cluster) | >50%CPU | not alive | CPHPG  Jeppesen |  |  | Restart, CSC | YES |
| Processes, sshd |  | not alive | CPHPG  Jeppesen | X |  | Restart (CSC) | YES, INDIRECTLY MONITORED |
| NFS, mounted directories ok (read/write/access) |  | not alive | CPHPG  Jeppesen | X |  | Manual, CSC | OK |
| RPM Check/CARMUSR Updates  Er en process ting ikke overvågnings ting. | Jeppesen | Internally | Jeppesen |  |  | Jeppesen | NO (men installations guidelines/vejledning skal checkes med linux techgruppen) |

## Interface / MQ monitoring

Recommendation when it comes to interface monitoring is only from a Carmen CMS point of view. The client should also look into what more needs to be monitored in the infrastructure in order to keep all interfaces running smoothly.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| What | Description | Max depth | Threshold % | Alert  Depth | Max Age  Hrs | Mail | SMS | Monitoring responsible | Comment  Action |
| MQ Manager | Not a live |  |  |  |  | CPHPG  Jeppesen |  | CSC | Restart CSC |
| CQFTITA (Planning)  Peeks are expected every xx. Of the month. | SSIM file, SSM, ASM+2  ROT+2 | 40000 | 2 | 800 | 72 | CPHPG  Jeppesen |  | CSC / Jeppesen | Restart SUB\_FLT\_PLANNING |
| CQFMVTD (Execution) | MVT / TRA  ASM<2 / ROT<2 | 25000 | 1 | 250 | 72 | CPHPG  Jeppesen |  | CSC / Jeppesen | Restart SUB\_FLT\_EXECUTION |
| CQFDIGX | DigXML | 75000 | 1 | 750 | 72 | CPHPG  Jeppesen |  | CSC / Jeppesen | Restart SUB\_DIGXML |
| CQF402 | Flown pax numbers  (LDM) | 12000 | 5 | 600 | 72 | CPHPG  Jeppesen |  | CSC / Jeppesen | Restart SUB\_LDM |
| CQF436 | Crew personal info. | 75 | 8 | 6 | 72 | CPHPG  Jeppesen |  | CSC / Jeppesen | Restart SUB\_CREWINFO |
| CQT401 | Baggage reconciliation | ? | 5 | 100 | ? | CPHPG |  | CSC |  |
| CQT411 | Crew to load-sheet | ? | 5 | 100 | ? | CPHPG |  | CSC |  |
| CQT42 | Passive booking | 1000 | 10 | 100 | ? | CPHPG |  | CSC |  |
| CQT324A | Meal order snapshot create. | ? |  | 100 | ? | CPHPG |  | CSC | Check with CARI |
| CQT324B | Meal order snapshot delete. | ? |  | 100 | ? | CPHPG |  | CSC | Check with CARI |
| CQTX3 | Vacation trade snapshot. | ? |  | 100 | ? | CPHPG |  | CSC |  |
| CQTX1 | Empno and name snapshot. | ? |  | 100 | ? | CPHPG |  | CSC |  |
| CQFREQ | Request / Reply  CrewServices, CI/CO, CrewLanding | 2500 | 4 | 100 | 2min | CPHPG  Jeppesen |  | CSC/ Jeppesen | Check logfiles  Restart SAS\_SERVICES  Start one of SAS\_RS\_WORKER\_PUBLISH1  SAS\_RS\_WORKER\_PUBLISH2  The one which is not currently running. |

SAS\_RS\_WORKER\_PUBLISH1

Some message statistics values, gathered from SP4 installation:

SUM is total number of messages for that queue, in SP4

TOT is total number of files (days) for that queue

AVG is average number of messages for that queue pr. day

MAX is maximum number of messages for that queue, for one day.

CQFMVTD SUM: 328252 TOT: 43 AVG: 7633 MAX: 9667

CQFTITA SUM: 251925 TOT: 43 AVG: 5858 MAX: 36984

CQFDIGX SUM: 651432 TOT: 43 AVG: 15149 MAX: 17996

CQF402 SUM: 110025 TOT: 43 AVG: 2558 MAX: 3043

CQF436 SUM: 74 TOT: 40 AVG: 1 MAX: 3

How do we monitor if no msg’s arrive to a queue within a certain timeframe ?

Are there any monitoring on Tibco ?

### Comments from CSC.

Jeg har kigget på 1.5 afsnittet og har nogle kommentarer, som du kan videregive til rette vedkommende.

Grundlæggende er vores MQ overvågning i Mainview 'event-driven' og baserer sig på overskridelse af hi-thresholds som en procentsats af maximum kødybden.

Man skal bl.a. derfor være opmærksom på følgende:

1) Hvis der med **Age** menes '*giv en alarm hvis en message har ligget på køen i xx antal minutter*', så er det IKKE en facilitet, der er omfattet af vores standard MQ overvågning i Mainview. I skrivende stund ved jeg ikke om det overhovedet er en mulighed i Mainview, men det kunne i så fald godt være kompliceret at sætte op. Hvis det skal undersøges, vil vi gerne have en fakturerbar Artemis kode.

2) Jeg antager, at der med **Length** menes 'Depth'. Roberts forslag vil alle kræve en ændring af de aktuelle settings, hvilket i sig selv ikke er nogen større sag. Men for CQF\* køernes vedkommende, kan dette ikke ændres før den famøse 3-dages upload er foretaget, da settings er afstemt efter denne.

3) Hvis man ønsker en alarm med en aktuel kødybde på 100, må man samtidig forholde sig til køens Maxdepth. Threshold kan ikke være mindre end 1%, så i et sådant tilfælde kan Maxdepth højst være 10000. Men Maxdepth skal samtidig afspejle, hvor mange messages kunden forventer der kan hobe sig op i en eventuel outage situation - og det gælder både Tibco og Carmen outages.

Et eksempel: CQFDIGX har p.t. en Maxdepth på 75.000 og en threshold på 60%. Roberts forslag er en alarm på 100. Det mindste antal vi kan komme ned på er imidlertid 750.

Det kan formentlig løses ved i visse tilfælde at sætte Maxdepth til det højeste antal, som med en threshold på 1% vil genere en alarm efter Roberts tal. Maxdepth kan så reguleres flyvende i tilfælde af langvarige problemer.

4) Det kan godt lade sig gøre at genere alarmer på en specifik kødybde, men dette er heller ikke en del af standard overvågningen. Hvis det vurderes at standardovervågningen (threshold %) ikke er tilstrækkelig, kan vi se på det. Men det bør også have en pris.

5) Robert spørger "how do we monitor if no msg's arrive to a queue within a certain timeframe ?".

Det gør vi heller ikke. Men vi tror at det kan lade sig gøre: igen er det dog noget, der skal undersøges (og i givet fald fremstilles specielt til Carmen) .

6) Jeg ved ikke hvilken overvågning, der er i TIBCO. Spørg Skafti.

## Interface / Incoming file monitoring

Recommendation when it comes to interface monitoring is only from a Carmen CMS point of view. The client should also look into what more needs to be monitored in the infrastructure in order to keep all interfaces running smoothly.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| What | Description | Criteria | Mail | SMS | Monitoring responsible | Comment  Action | Csc answer |
| Currency | Currency file for Perdiem | If CUR\* exists in current\_carmtmp/ftp/in or in current\_carmtmp/ftp/in.error | CPHPG  Jeppesen |  | Jeppesen | Restart SUB\_CURRENCY | NO |
| Oxford Aviation Academy | OAA Simulator trips | If OAA\* exists in current\_carmtmp/ftp/in or in current\_carmtmp/ftp/in.error | CPHPG  Jeppesen |  | Jeppesen | Restart SUB\_SFA\_IN | NO |
| Flight Owner | Flight Owner information | If FIA\* exists in current\_carmtmp/ftp/in or in current\_carmtmp/ftp/in.error | CPHPG  Jeppesen |  | Jeppesen | Restart SUB\_FLT\_OWNERSHIP | NO |

## Interface / Publish file monitoring (Jeppesen uddyber, og tager det med SAS.)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| What | Description | Criteria (fils exist in) | Mail | SMS | Monitoring responsible | Comment  Action | Csc answer |
| Master Crew lists / List12 /List9 / OfficeList | Master Crewlists etc. | OUTPUTFILES/EXPORT | CPHPG  Jeppesen |  |  | Restart PUB\_CREWREPORTS | NO |
| CrewManifest | CrewManifests | OUTPUTFILES/EXPORT | CPHPG Jeppesen |  |  | Restart PUB\_MANIFEST\_\* | NO |
| Oxford Aviation Academy | OAA Assignments | Current\_carmtmp\_cct/ftp/out | CPHPG  Jeppesen |  |  | Restart PUB\_SFA\_OUT | NO |
| Salary | Div. salary files | OUTPUTFILES/RELEASE | CPHPG  Jeppesen |  |  | Restart PUB\_SALARY | NO |
| Illness | Illness file | OUTPUTFILES/ILLNESS | CPHPG Jeppesen |  |  | Restart PUB\_ILLNESS | NO |
| Hotel | Hotel and Transport files | OUTPUTFILES/ |  |  |  | Restart PUB\_HOTEL | NO |
| CrewMeal | Meal orders and forecasts | Meal orders received  OUTPUTFILES/MEAL |  |  |  | Restart PUB\_MEAL | NO |