



**REGISTRY MANAGEMENT REPORT
AND USER GUIDE
MARCH 2011**



**PREPARED BY: JADE OPERATIONS
12 JULY 2011**

Jade Software Corporation Limited cannot accept any financial or other responsibilities that may be the result of your use of this information or software material, including direct, indirect, special or consequential damages, or loss of profits. There are no warranties extended or granted by this document or software material.

You should be very careful to ensure that the use of this software material and/or information complies with the laws, rules, and regulations of the jurisdictions with respect to which it is used. No part of this document may be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose, without the express written permission of Jade Software Corporation Limited.

The information contained herein is subject to change without notice. Revisions may be issued to advise of such changes and/or additions.

Copyright © 2011 Jade Software Corporation Limited.

All rights reserved.

JADE is a trademark of Jade Software Corporation Limited. All trade names referenced are the service mark, trademark, or registered trademark of the respective manufacturer.



CONTENTS

| | | |
|----------|-------------------------------------|-----------|
| 1 | EXECUTIVE SUMMARY | 5 |
| 1.1 | REPORTING | 5 |
| 1.1.1 | SELF REVIEW | 5 |
| 1.2 | AVAILABILITY | 5 |
| 1.3 | PERFORMANCE | 6 |
| 1.4 | FAULTS AND RESOLUTION | 6 |
| 1.5 | OTHER MATTERS | 6 |
| 2 | PRODUCTION PERFORMANCE | 7 |
| 2.1 | AVAILABILITY | 7 |
| 2.1.1 | HISTORY | 7 |
| 2.2 | OUTAGES | 8 |
| 2.2.1 | UNPLANNED OUTAGES | 8 |
| 2.2.2 | PLANNED OUTAGES | 8 |
| 2.3 | CHANGE CONTROL | 8 |
| 2.3.1 | APPLICATION UPDATES | 8 |
| 2.3.2 | ENVIRONMENT UPDATES | 8 |
| 2.3.3 | PLANNED UPDATES | 8 |
| 2.4 | ONLINE TRANSACTION VOLUMES | 9 |
| 2.5 | BATCH SCHEDULE | 10 |
| 2.6 | MONTHLY TEST RESTORE OF GICPREG | 10 |
| 3 | TEST ENVIRONMENT PERFORMANCE | 11 |
| 3.1 | AVAILABILITY | 11 |
| 3.2 | UNSCHEDULED OUTAGES | 11 |
| 3.3 | SCHEDULED OUTAGES | 11 |
| 3.4 | PLANNED UPDATES | 11 |
| 4 | SERVER PATCH STATUS | 12 |
| 5 | CONTACTS AND ESCALATION | 13 |
| 5.1 | CALL RECORDING PROCESS | 13 |
| 5.2 | JADE OPERATIONS CONTACT INFORMATION | 14 |
| 5.3 | CUSTOMER CONTACT INFORMATION | 15 |
| 5.4 | AUTOMATED FAULT ESCALATION PROFILES | 16 |
| 5.4.1 | REGISTRY PRIORITY A FAULTS | 16 |
| 6 | AGREED PROCEDURES | 17 |
| 6.1 | CHANGE CONTROL | 17 |
| 6.2 | APPLICATION RESTARTS | 17 |
| 6.3 | TEST SYSTEM REFRESH | 17 |
| 6.4 | PERSONNEL AND CONTACT DETAILS | 17 |
| 6.5 | TAPE RETENTION AND STORAGE | 17 |
| 6.6 | ANTI-VIRUS PRODUCT | 18 |
| 6.7 | SYSTEMS MANAGEMENT REPORT | 18 |

| | | |
|----------|---|-----------|
| 6.8 | INCIDENT REPORTS | 18 |
| 6.9 | JADE DIRECT RECOMMENDATIONS | 18 |
| 6.10 | APPLICATION ACCESS | 18 |
| 7 | DISASTER RECOVERY PROCEDURES | 19 |
| 7.1 | AUTHORISATION TO INVOKE DR PROCESS | 19 |
| 7.1.1 | JADE SEEK AUTHORISATION FROM GIC..... | 19 |
| 7.1.2 | ALTERNATIVE AUTHORISATION..... | 19 |
| 7.2 | JADE ADVISES GIC DR HAS BEEN INVOKED..... | 19 |
| 7.3 | JADE ADVISES REGISTRY PARTICIPANTS DR HAS BEEN INVOKED | 19 |
| 7.4 | JADE INVOKES DISASTER RECOVERY | 20 |
| 7.4.1 | DNS UPDATES | 20 |
| 7.5 | JADE CONFIRM DR SYSTEM IS READY FOR CHECKING..... | 20 |
| 7.6 | GIC CHECK THE STATUS OF THE DR SYSTEM | 21 |
| 7.7 | PARTICIPANTS ADVISED TO PERFORM POST-TAKEOVER TESTS AND REPROCESSING | 21 |
| 7.8 | REINSTATEMENT OF NORMAL PRODUCTION..... | 22 |

1 EXECUTIVE SUMMARY

1.1 REPORTING

| REQUIREMENT | TARGET | ACTUAL | MET |
|---|---|------------------|-----|
| Number of ICP's and switch notices [Rule 84.1] | 09:00 6 th business day | 01Apr11 00:11 | Yes |
| Participant compliance with Rules [Rule 84.2] | 16:00 15 th business day | 01Apr11 00:11 | Yes |
| ICP details per Retailer [Rule 85.1] | 09:00 1 st business day | 01Apr11 00:11 | Yes |
| ICP details per Distributor [Rule 86] | 09:00 1 st business day | 01Apr11 00:11 | Yes |
| ICP details per Meter Owner [Rule 87] | 09:00 1 st business day | 01Apr11 00:11 | Yes |
| Registry Operator Compliance [Rule 19] | Within 10 business days of month end | 01Apr11 17:00 | Yes |

1.1.1 SELF REVIEW

No compliance failures were detected during the period.

All obligations under the Rules, the Service Provider Agreement, and Agreed Performance Standards, were met by the Registry Operator.

Service Levels and Performance Standards were met.

1.2 AVAILABILITY

| REQUIREMENT | TARGET | ACTUAL | MET |
|--|---------|---------|-----|
| Extended Business Hours Availability [07:00 – 19:30] | 99.5% | 100% | Yes |
| All Other Hours Availability | 98.0% | 99.97% | Yes |
| Unplanned Outages | 4 | 0 | Yes |
| Planned Outages | 1 | 1 | Yes |
| Planned Outage Duration | 2 hours | 15 mins | Yes |
| Planned Outages Approved by Gas Industry Co. | Yes | Yes | Yes |
| Planned Outages Scheduled Outside Extended Business Hours | Yes | Yes | Yes |

1.3 PERFORMANCE

Performance requirements were documented in the Test Plan – System Performance version 1.2 of November 2008, and agreed by GIC as meeting the requirements of the Registry Operator Service Provider Agreement, schedule 4.3.

| REQUIREMENT | TARGET | ACTUAL | MET |
|---|---|------------------|-----|
| Internal Response Time for ICP-based query. % of WebViewICPDetails to complete within 1sec: | 95% | 100% | Yes |
| End User Response Time for address-based query. % of WebAddressSearch to complete within 5sec: | 95% | 98.5% | Yes |
| On Demand Report Delivery Maximum Report run duration less than | 24 hours | 28 seconds | Yes |
| Standard Month End Report files completed | 09:00 1 st business day | 01Apr11 00:11 | Yes |

*The performance tests indicated 100ms should be added to the internal response time to arrive at the end-user response time. End-user response times will vary depending on user hardware and bandwidth subscription, and ISP capability.

1.4 FAULTS AND RESOLUTION

This section reports in summary form all faults and their resolution times in accordance with para 5.1.8 of the Service Provider Agreement.

| DATE | REF | DETAIL | TIME TO RESOLVE |
|---------|---------|---|-----------------|
| 14Mar11 | PAR#426 | Unable to assign supervisor as an agent | <1 day |

1.5 OTHER MATTERS

This section covers issues raised by users that are external to the Registry Operators obligations, items of general interest, and matters of concern to the Registry Operator.

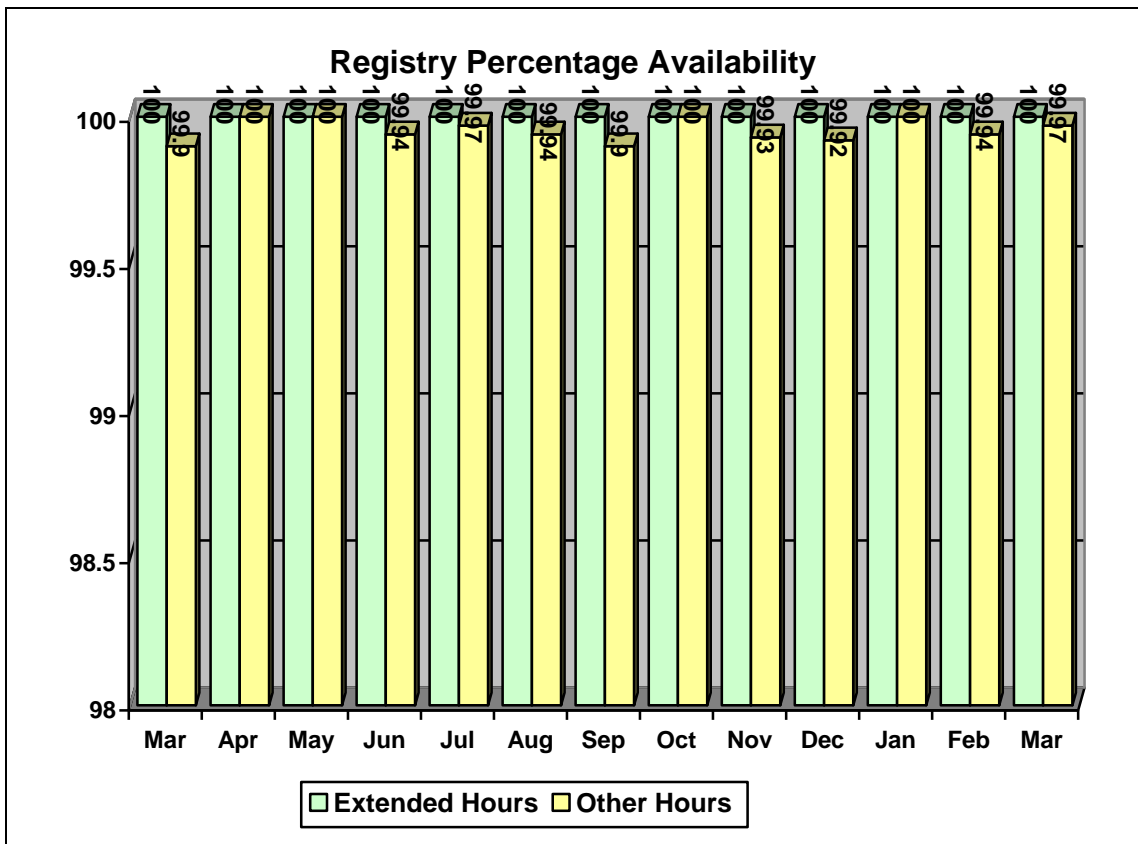
- SDS Takeover testing completed successfully with a cutback on 15Mar

2 PRODUCTION PERFORMANCE

2.1 AVAILABILITY

This section reports the availability of your application, the performance of key transactions, and the loading of critical elements of the computer system itself. Availability is measured against agreed service levels, and load is measured against agreed alerting thresholds.

2.1.1 HISTORY



2.2 OUTAGES

2.2.1 UNPLANNED OUTAGES

Unplanned outages are limited to 4 per month.

| DATE | REF | DESCRIPTION | STATUS | DURATION |
|------|-----|---|--------|----------|
| | | No unscheduled outages during the month | | |
| | | | Total | 00:00 |

2.2.2 PLANNED OUTAGES

All planned outages must be approved in advance by GIC. Planned outages are to be limited to 1 per month with a maximum duration of 2 hours.

| DATE | REF | DESCRIPTION | STATUS | DURATION |
|---------|---------|--------------------------------|----------|----------|
| 15Mar11 | #337771 | SDS Takeover testing - cutback | Complete | 00:15 |
| | | | Total | 00:15 |

2.3 CHANGE CONTROL

All changes are discussed with you and approved by you prior to implementation.

2.3.1 APPLICATION UPDATES

| DATE | REFERENCE | AUTHORISED BY | DETAIL |
|------|-----------|---------------|--------|
| | | | - |

2.3.2 ENVIRONMENT UPDATES

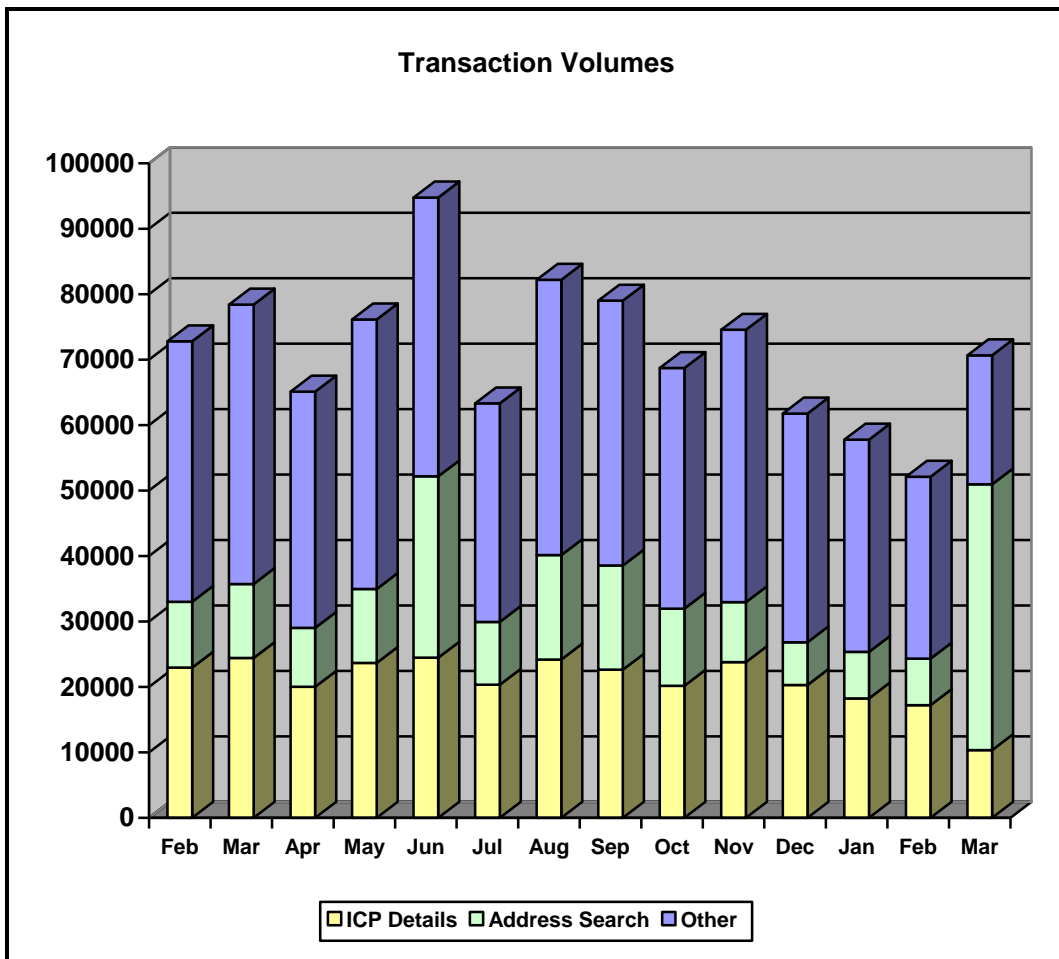
| DATE | REFERENCE | AUTHORISED BY | DETAIL |
|---------|-----------|---------------|----------------------|
| 15Mar11 | #337771 | GIC | SDS Takeover testing |

2.3.3 PLANNED UPDATES

| DATE | REFERENCE | DETAIL |
|------|-----------|--------|
| | | - |

2.4 ONLINE TRANSACTION VOLUMES

| | TOTAL ONLINE TRANSACTIONS | VIEW ICP DETAILS | ADDRESS SEARCH |
|------------|---------------------------|------------------|----------------|
| This Month | 70,668 | 10,338 | 40,598 |
| Last Month | 52,076 | 17,214 | 7,078 |
| % Change | +35.7% | -40% | 573% |



Note: This information is provided for performance analysis purposes ONLY. The online transactions above include the generic 'Web Display Form' so the transactions will be significantly higher than that reported via the application.

Transaction statistics are provided via the application, in accordance with functional specification.

Performance analysis statistics as above and Transaction statistics are NOT comparable. In light of this, volume-based inferences should not be drawn from these statistics without consultation.

2.5 BATCH SCHEDULE

The batch schedule detailed below documents Jade Operations controlled processes that are run on a regular cycle and which may impact other batch process functions.

This schedule may be adjusted to suit application requirements.

| DAY | TIME | TASK | DURATION |
|---------|------|-----------------------------------|--------------------|
| Mon-Fri | | | |
| | 0215 | Online back-up | 30 minutes |
| | 0500 | Tape backup | 30 minutes |
| | 0600 | Defrag of OS drive | 30 minutes maximum |
| | 0630 | Defrag of tools drive | 30 minutes maximum |
| | | | |
| | 2100 | Defrag of database journals drive | 2 hour maximum |
| | | | |
| Fri | 0200 | Trend Anti-Virus full scan | |
| | | | |
| Sat | 0215 | Online backup | 30 minutes |
| | 0400 | Defrag of database drive | 3 hour maximum |
| | 0500 | Tape backup | 30 minutes |
| | 1800 | Defrag of backup drive | 2 hour maximum |
| | | | |
| | | | |
| Sun | 0215 | Online backup | 30 minutes |
| | 0500 | Tape backup | 30 minutes |
| | 1800 | Defrag of backup drive | 2 hour maximum |

2.6 MONTHLY TEST RESTORE OF GICPREG

The production database is restored to the disk backup staging area from tape on mid-month and a database recovery performed to the end of the journal included with the backup.

Latest Result: Recovery was completed successfully on 12Mar11 with an elapsed time of 9mins.

The objective of the test is to prove the integrity of the tape copy.

3 TEST ENVIRONMENT PERFORMANCE

Reporting for the GICUREG test environment is less comprehensive than for the production environment. Additional reporting may be requested if required.

3.1 AVAILABILITY

The MONITORED hours are those agreed with you as being the period during which problems should be resolved, and escalated where necessary.

| MEASURE | GICUREG |
|--------------------------|---------|
| Unscheduled Outages Only | 100% |

3.2 UNSCHEDULED OUTAGES

| DATE | REF | DESCRIPTION | STATUS | DURATION |
|------|-----|---|--------|----------|
| | | No unscheduled outages during the month | | |
| | | | Total | 00:00 |

3.3 SCHEDULED OUTAGES

| DATE | REFERENCE | AUTHORITY | DETAIL |
|---------|-----------|-----------|--------------------------------------|
| 31Mar11 | 344433 | GIC | Microsoft Patches to Test/DR servers |

Refresh timings require careful planning due to their duration and their potential impact on availability.

3.4 PLANNED UPDATES

| DATE | REFERENCE | DETAIL |
|------|-----------|--------|
| | | - |

4 SERVER PATCH STATUS

Application of Microsoft security patches for managed servers is undertaken by Jade Operations on advice from the Jade Security Officer.

Managed servers are built with minimal Microsoft components to reduce both OS footprint and security exposures, and thus reduce the frequency of server restarts required.

All patches are pre-tested against the standard JADE Care tools and OS configurations, and are distributed in a controlled sequence with customer production servers being the last servers in the distribution cycle.

Non-critical patches are generally held for distribution until such time as a critical patch is released, at which point all outstanding patches are applied.

The following patches are currently available for application, and should be applied at your earliest convenience. Formal change control requests will be submitted prior to implementation.

| KB REF | DESCRIPTION | SERVERS | CRITICAL |
|--------|---|---------|----------|
| | <p>There are no REQUIRED Hotfixes outstanding</p> <p>The following 10 Non-Critical Hotfixes are NOT Installed:</p> <p># MS10-092 :- [Task Scheduler (Privilege Elevation) KB2305420]</p> <p># MS10-096 :- [Windows Address Book (Remote Code Execute) KB2423089]</p> <p># MS10-100 :- [Consent User Interface (Privilege Elevation) KB2442962]</p> <p># MS11-002 :- [Vulnerabilities in Microsoft Data Access Components (Remote Code Execution) KB2451910]</p> <p># MS11-003 :- [Cumulative IE (Remote Code Execute) KB2482017]</p> <p># MS11-006 :- [Shell Graphics Processing (Remote Code Execution) KB2483185]</p> <p># MS11-007 :- [Open Type Font Format Driver (Remote Code Execute) KB2485376]</p> <p># MS11-011 :- [Windows Kernel (Privilege Elevation) KB2393802]</p> <p># MS11-012 :- [Windows Kernel Mode Drivers (Privilege Elevation) KB2479628]</p> <p># MS11-017 :- [RDP client (Remote Code Execute) KB2508062]</p> | | |

5 CONTACTS AND ESCALATION

5.1 CALL RECORDING PROCESS

The Central Systems team is the single point of contact for GIC and Participants to contact Jade.

Whenever Central Systems are contacted by GIC or Participants, or Central Systems monitor an event in the Registry, a 'Tracker Call' is created. This is used to record the information below, much of which should be supplied by the caller:

- Full description of problem, including the steps the user took to get the problem
- Screen or Form names involved
- Error Message number and content
- Screen snapshot
- Time the problem occurred
- Priority
- Any outage Information
- Subsequent actions and updates
- Information for root-cause analysis and end of month reporting

The priority of a Tracker Call will be decided by Central Systems at the time of call creation, or by GIC or Participants, when the call is placed. The priority can be changed at any time by GIC or participants, or by Central Systems. Priority A calls will only be changed by mutual agreement.

The classification of calls has no bearing on any formal service level assurance availability targets documented in the Jade Care24 agreement. I.e. an incorrect priority allocation by either party does not relieve Jade Operations its continuity of service obligations.

| CALL PRIORITY | CLASSIFICATION | TARGET TIME TO RESPOND | TARGET TIME TO REPAIR |
|---------------|---|------------------------|-----------------------|
| A | All Registry operations are unable to be carried out and there is no workaround | < 1 hour | < 4 hours |
| B | Registry operations are impacted, but there is a short term workaround. | < 2 business days | < 5 business days |
| C | Registry operations are not impacted, including : Cosmetic and formatting changes to the Registry General queries about Registry features or operations | < 2 business days | < 20 business days |

5.2 JADE OPERATIONS CONTACT INFORMATION

| Central Systems | |
|--|--|
| Role | Central Systems is the single point of contact for JADE Operations. Central Systems will co-ordinate the involvement of the necessary staff from elsewhere in the JADE organisation. |
| EMAIL | Cnwcs1@jadeworld.com or csystems@jadeworld.com |
| Phone | 0800 65 22 66 or +64 3 359 9220 or +64 21 225 8122 Skype JadeCare24 |
| Fax | +64 3 358 7156 |
| Address Christchurch Data Centre | JADE Software Corporation 21 Sheffield Crescent P.O. Box 20159 Christchurch, New Zealand |

| Client Services Representative | |
|---------------------------------------|--|
| Role | Joel Langley |
| Role | The CSR provides a more formal channel of communications between the two organisations. The CSR is responsible for scheduling non-routine activities with the customer, acts as the primary point of fault escalation and also produces the monthly reporting. |
| EMAIL | jlangle@jadeworld.com |
| Phone | +64 3 367 8318 |

| Business Manager | |
|-------------------------|--|
| Role | Alison Hitchcock |
| Role | The Business Manager takes overall responsibility for the customer relationship with Jade. |
| EMAIL | ahitchcock@jadeworld.com |
| Phone | +64 9 573 7184 |

5.3 CUSTOMER CONTACT INFORMATION

| | |
|------------------|--|
| Contact 1 | Andrew Walker, Advisor |
| Email | Andrew.Walker@gasindustry.co.nz |
| Office | +64 4 472 1800 |
| DDI | +64 4 494 6587 |
| Mobile | +64 21 053 6767 |

| | |
|------------------|--|
| Contact 2 | Ian Dempster, Senior Advisor Wholesale Markets |
| Email | Ian.Dempster@gasindustry.co.nz |
| Office | +64 4 472 1800 |
| DDI | +64 4 494 2467 |
| Mobile | +64 27 540 5065 |

| | |
|------------------|--|
| Contact 3 | Peter Davies, Corporate Services Manager |
| Email | Peter.Davies@gasindustry.co.nz |
| Office | +64 4 472 1800 |
| DDI | +64 4 494 2461 |
| Mobile | +64 27 450 9941 |

5.4 AUTOMATED FAULT ESCALATION PROFILES

The automated escalation profiles are drive from the call tracking system (Tracker) and are based on fault activity (open, update, close), and time (on activity, interval since activity, and repeat interval since activity).

5.4.1 REGISTRY PRIORITY A FAULTS

| WHEN | TIME DELAY | CONTACT | TYPE | REPEAT INTERVAL |
|-----------|------------|-------------------------------------|-------|-----------------|
| On Open | | | Email | |
| | | Jade On Call Developer | Page | |
| | 00:05 | Jade Client Services Representative | Page | |
| | 00:10 | Jade Central Systems Manager | Page | 01:00 |
| | | Jade Service Delivery manager | Page | 01:00 |
| | | Jade Development Manager | Page | 01:00 |
| | 01:15 | Jade Operations General Manager | Page | |
| | 02:00 | Jade Delivery Manager | Page | |
| | 03:00 | Jade Head of Delivery | Page | |
| | 04:00 | Jade CEO | Email | |
| On Update | | | Email | |
| | | | | |
| On Close | | | Email | |
| | | Jade On Call developer | | |

6 AGREED PROCEDURES

6.1 CHANGE CONTROL

All significant change elements will be notified to GIC by creation of a Tracker call. Changes will only be made on approval of the request, EXCEPT where Jade Operations consider security is under significant threat, in which case the change activity will be notified with as much advance notice as is possible.

6.2 APPLICATION RESTARTS

Jade operations staff will restart environments and servers as requested, provided such requests are evidenced by email, and originate from known users, or the generic registry@gasindustry.co.nz.

Verbal requests will not be permitted without authorisation from the Jade 1st Line Support manager, or the Jade CSR.

6.3 TEST SYSTEM REFRESH

Where the test system is to be refreshed from the production system, a request must be emailed to the Registry Helpdesk at least 48 hours in advance of the time at which the refreshed test system is to be available for users.

Requests will generally be actioned overnight using the latest available backup as the source. Failures in the refresh process will be investigated and resolved next business day.

6.4 PERSONNEL AND CONTACT DETAILS

GIC must advise Jade Operations of changes in personnel and contacts details where individuals are named as direct contacts. Fault escalations are pre-defined and automated to individual email addresses and SMS capable devices. Leave coverage and personnel changes must be advised for these functions to be effective.

6.5 TAPE RETENTION AND STORAGE

The latest tape is moved to the offsite store each day. Two generations of tape are held at the offsite store and the remainder of the cycle (10) are moved back to the on-site store.

Test restores of production tape backups are conducted monthly.

6.6 ANTI-VIRUS PRODUCT

Jade operations install and manage anti-virus product on all managed servers. Where non-managed servers are hosted in the same data centre as managed servers, and the identical anti-virus product is installed on managed and non-managed servers, Jade will make engine and pattern file updates available from the managed servers.

6.7 SYSTEMS MANAGEMENT REPORT

This systems management report is to be provided by email to Andrew Walker, copy Ian Dempster.

Target date for delivery is the 5th working day of the month following the calendar month to which the report relates.

6.8 INCIDENT REPORTS

An incident report will be prepared for breach of Service Provider obligations and will be emailed to Andrew Walker within 72 hours of any outage.

6.9 JADE DIRECT RECOMMENDATIONS

Where Jade Direct have recommendations for changes to hardware or the operating environment, these recommendations will be submitted to GIC. Implementation of such recommendations will be formalised through the change control process, and documented through the systems management report in summary form.

6.10 APPLICATION ACCESS

Gas Industry Company will advise Jade Operations of access changes required as staff join, leave, and change responsibilities. Jade Operations will maintain the AD security groups, and may update the Jade Systems Manager operator details on GIC's behalf.

7 DISASTER RECOVERY PROCEDURES

Registry restoration has a target time of 12 hours from the point at which DR process is authorised, and must be restored within 36 hours following a major disaster.

7.1 AUTHORISATION TO INVOKE DR PROCESS

7.1.1 JADE SEEK AUTHORISATION FROM GIC

In the case of an adverse event affecting the Registry system's availability, Jade will seek authorisation from one of the following GIC contacts as to whether the DR Provisions should be invoked.

| CONTACT | DR AUTHORISED GAS INDUSTRY COMPANY STAFF | |
|---------|--|------------------------------------|
| 1 | Andrew Walker | Advisor |
| 2 | Ian Dempster | Senior Adviser – Wholesale Markets |
| 3 | Peter Davies | Corporate Services Manager |

7.1.2 ALTERNATIVE AUTHORISATION

Should the GIC contacts above not be available, GIC have authorised Jade to make the decision to invoke the disaster recovery procedures. In this situation, Jade will obtain internal authorisation to switch to the secondary system from one of the following Jade staff.

| CONTACT | DR AUTHORISED JADE STAFF | |
|---------|--------------------------|---------------------------------|
| 1 | Alison Hitchcock | Business Manager |
| 2 | Joel Langley | Customer Service Representative |
| 3 | Stephen Black | Service Delivery Manager |
| 4 | David Blair | General Manager Operations |

7.2 JADE ADVISES GIC DR HAS BEEN INVOKED

Once the decision to invoke disaster recovery has been made, Jade will email the 'gasregistrydrcontacts' email group (GIC staff only), plus the GIC contacts listed above, stating that the GIC disaster recovery provisions are about to be invoked.

7.3 JADE ADVISES REGISTRY PARTICIPANTS DR HAS BEEN INVOKED

Jade will email the Gas Registry outage notifications list (contactsgasregistry email group) to advise that the disaster recovery provisions have been invoked. The email will state:

"The Gas Registry System has encountered a serious issue and all processing will be transferred to the disaster recovery system."



Please do NOT attempt to access the system until advised."

7.4 JADE INVOKES DISASTER RECOVERY

On receiving authorisation to invoke the disaster recovery provisions, Jade will proceed with the technical process of switching to the secondary system.

7.4.1 DNS UPDATES

Authorisation to proceed with DR, whether obtained from authorised GIC staff, or authorised Jade staff, grants authorisation for Jade to instruct Domainz to alter the ip address associated with the DNS entry <https://www.gasregistry.co.nz>.

The change may be made through an internet session using credentials documented in the Jade Operations (jadeutil) procedures.

7.5 JADE CONFIRM DR SYSTEM IS READY FOR CHECKING

Once processing has been switched to the secondary system, Jade will perform checks per the Registry Administrator checklist to ensure the disaster recovery system is operating as expected.

Jade will then email the 'gasregistrydrcontacts' email group (GIC staff only), plus the other contacts above (see step 1), stating that the disaster recovery system is live and ready for testing by GIC.

7.6 GIC CHECK THE STATUS OF THE DR SYSTEM

As long as the communications network and disaster recovery infrastructure were operating normally at the time of the disaster, the disaster recovery system will be very close to being up to date with the primary system at the time of failure. Only transactions that were 'still in progress' will not have been replicated. GIC must confirm that this is the case.

1. A GIC system administrator confirms that they are able to access the disaster recovery system via the application server.
2. A GIC system administrator confirms that they are able to access the system via the web site.
3. A GIC system administrator conducts a general check on recent data in the system to confirm that it is as up to date as expected.
4. The GIC contact confirms to Jade that the Registry system is in the expected state and requests Jade to advise all participants that the system is available.
5. If no confirmation is received from Gas Industry Company within 3 hours of the notification described in step 6, Jade is authorised to proceed to the following step.

7.7 PARTICIPANTS ADVISED TO PERFORM POST-TAKEOVER TESTS AND REPROCESSING

Jade will email the 'contactsgasregistry' email group to advise that the disaster recovery system is now available. The email will be as follows.

"The Gas Registry System is now available. Please complete the following checks to determine if any recent registry transactions need to be reinitiated:

- 1. Online Updates – Logon to the Registry system and check back through the most recent online changes made to the system to determine any online updates that may need to be re-entered.***
- 2. FTP Updates – Logon to the Registry system and perform a 'File Search' to check the status of any recent input files sent to the registry. Re-submit any files that are not recorded as successfully processed. (Output files resulting from re-submitted input files may contain some duplication errors for files that had been partially processed at the time of the disaster event).***
- 3. Notifications – Logon to the Registry system and request a resend of all update and switch notifications for that day.***
- 4. Reports – Logon to the Registry system and re-submit any report requests for reports not yet received."***



7.8 REINSTATEMENT OF NORMAL PRODUCTION

The specific cause of the disaster will determine the actions and time involved to reinstate the production system. GIC and Jade will commence discussions on this as soon as practical.

When a suitable hardware platform has been established at the primary site, the production database will be copied to the primary site, and the database synchronisation process re-established.

When the databases have synchronised, production will be transferred to the primary site at a time to be agreed with GIC. DNS updates will be actioned by Jade.