

Internet Society of New Zealand Incorporated  
(InternetNZ)

New Zealand Domain Name Registry Limited  
(.NZ Registry Service - NZRS)

SERVICE LEVEL AGREEMENT (SLA)

for

OPERATION OF THE .NZ DOMAIN NAME  
REGISTER BY .NZ Registry Services

# SERVICE LEVEL AGREEMENT

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## SERVICE LEVEL AGREEMENT

**DATED:** This 4<sup>th</sup> day of May 2006

**BETWEEN:** Internet Society of New Zealand Incorporated having its registered office at level 9, 5 – 7 Willeston Street, Wellington (“InternetNZ”)

**AND:** New Zealand Domain Name Registry Limited a duly incorporated company having its registered office C/o Quigg Partners, Level 7, The Bayleys Building, 28 Brandon Street, Wellington (“NZRS”)

### 1. BACKGROUND

InternetNZ ([The Internet Society of New Zealand](#)) is a non-profit society established in 1995 to foster coordinated and cooperative development of the Internet in New Zealand. InternetNZ has been assigned responsibility for managing the .nz name space by [ICANN](#), the non-profit corporation formed to assume responsibility for domain name system management. To carry out this function, InternetNZ established the office of the Domain Name Commissioner ([DNC](#)).

InternetNZ has granted its subsidiary company, New Zealand Domain Name Registry Limited, trading as .nz Registry Services (NZRS) the exclusive right to operate and manage the register of domain names and Domain Name System (DNS) in the .nz domain name space.

NZRS operates the Shared Registry System Application (SRS) and the DNS. NZRS manages the SRS, designed to allow a competitive registrar market for domain name registrations, and has responsibility for the management of the .nz DNS system.

Under the SRS, there is a single register for registering domain names and holding and managing associated technical and administrative information. The NZRS operation allows the registration of domain names and modification of information associated with that name on the register by authorised Registrars.

Registrars manage their own commercial relationships with Registrants (the person or organisation with the right to use the domain name while it is registered on the register).

NZRS deals solely with, and is focused on, supporting the interests of Registrars in terms of access and service. It has no direct relationship or communication with Registrants. At a broader strategic level, NZRS has a significant stake in the protection of the interests of Registrants and all internet users in terms of providing ongoing, continuous availability of domain name services.

## THE PARTIES AGREE:

### 2. DEFINITIONS AND INTERPRETATIONS

2.1. In this agreement, unless the context otherwise requires:

“**Agreement**” means this Service Level Agreement and includes any Schedules, Appendices, Service Order, attached to or incorporated in it by reference.

“**Commencement Date**” means the date this Agreement is signed by both parties.

“**Confidential Information**” means all information which is, or may be commercially sensitive and includes, but is not limited to, computer data and information being personal information including names, addresses, personal, medical or business affairs of persons associated with either party and information relating to the organisation, methods, administration, operation, business affairs, services provided by or to third parties or financial or commercial arrangements of either party, or persons associated with either party and information of any nature, technical or otherwise, relating to any product or process. For the avoidance of doubt, Confidential Information includes any information or files which are contained on the .nz register including, but not limited to, .nz domain names and the numerical address of the name server and contact details relating to those domain names, regardless of whether any of it may be publicly available. It specifically excludes information which:

- (a) was rightfully in the possession of such party prior to the commencement of negotiations leading to the agreement;
- (b) is already public knowledge or becomes so at a future date (otherwise than as a result of a breach of clause 8);
- (c) which is trivial or obvious; or
- (d) is required to be disclosed by law.

“**Domain Name Commissioner**” means the Office of the Domain Name Commissioner (DNC) an operational office of InternetNZ reporting to the NZOC. The DNC is responsible for the ongoing development and monitoring of the competitive registrar market and the environment for registering and managing .nz domain names. This includes responsibility for the authorisation of registrars and the handling of disputes and complaints.

“**DNC**” means the Office of the Domain Name Commissioner.

“**Intellectual Property**” means all industrial and intellectual property rights of NZRS, whether registered or unregistered, including, but not limited to the following:

- (a) patents, trade marks, service marks, trade names, registered designs, design rights, copyright (including all copyright in any designs and computer software), source code, and applications for any of the foregoing;

- (b) the copyright in all drawings, plans, specifications, designs, policies, procedures or other documents relating to the Services including rights in computer software;
- (c) knowledge connected with the Services including manufacturing data, specifications and drawings, research materials and technical information;
- (d) rights under any agreement or contracts granted by NZRS to third parties to use any of the above.

“**NZOC**” means .nz Oversight Committee.

“**.nz Oversight Committee**” is a subcommittee of the Internet Society of New Zealand Inc (InternetNZ) that has been delegated authority to oversee the .nz domain space by the InternetNZ Council. The responsibilities of the NZOC include:

- Oversight of the general operation of the .nz domain name space and the contracts that underpin it;
- The authorisation of registrars;
- The development and implementation of .nz policies;
- International issues and developments as they affect .nz domain name space; and
- Establishing the priorities for and supervising the Office of the Domain Name Commissioner.

“**Representative**” means for NZRS, the General Manager, and for the InternetNZ, is the Domain Name Commissioner;

“**Service Level Standards**” means the detailed service requirement specifications to be performed by NZRS as identified in this Service Level Agreement, or any Service Order;

“**Service Order**” means any service order incorporated into this Agreement by reference identifying the scope and Service Level Standards for each service category;

“**Services**” means any service or task to be performed by NZRS under this Agreement or any other agreement or document referred to in this Agreement or which refers to this Agreement;

“**Third Party Supplier**” means any supplier contracted by NZRS to perform one or more service identified in this Service Level Agreement or any Service Order.

“**Top Level Domain (TLD)**” means the New Zealand Country Code Top Level Domain Name “.NZ ccTLD”. Where TLD is used in this document it also includes all New Zealand Second Level Domains (2LD).

2.2. For the purposes of interpretation and construction of this Agreement:

- (a) Headings and under linings are for convenience only and do not affect the interpretation of the Agreement;
- (b) Words importing the singular include the plural and vice versa;

- (c) Words importing a gender include any gender;
- (d) A reference to a person includes that person's successors and permitted assigns;
- (e) A reference to a part, clause, party, appendix, exhibit or Schedule is a reference to a part and clause of, and a party, appendix, exhibit and Schedule to this Agreement and a reference to this Agreement includes any appendix, Schedule, Service Level Agreement and Service Order attached to it or incorporated in it by reference;
- (f) A reference to any statute, regulation, proclamation, ordinance or by-law includes all statutes, regulations, proclamations, ordinances or by-laws varying, consolidating or replacing them and a reference to a statute includes all regulations, proclamations, ordinances and by-laws issued under that statute;
- (g) No rule of construction applies to the disadvantage of a party because that party was responsible for the preparation of this Agreement or any part of it; and
- (h) Nothing in this Agreement is intended to confer any benefit to any third party under the Contracts (Privity) Act 1982.

### **3. SCOPE OF SERVICES**

- 3.1. NZRS will use its best efforts to provide the scope of Services as set out in Schedule A of this agreement.

### **4. TERM**

- 4.1. This Agreement shall commence on the Commencement Date and continue until it is terminated in accordance with the terms of this agreement.
- 4.2. A review of this Agreement will be held after two years from the date of signing.

### **5. PAYMENT**

- 5.1. NZRS agrees to pay the DNC an annual management fee to cover the costs of the DNC for overseeing the .nz domain name market.
- 6. The level of the management fee will be only that required for the DNC to perform the functions and responsibilities specified by NZOC. This amount will be calculated through a detailed annual budget process, with the DNC consulting with NZRS as required. The DNC budget will be finalised and advised to NZRS in a time frame that fits in with NZRS budget requirements.
- 6.1. The DNC management fee will be invoiced monthly in advance on the first day of the month and is payable by NZRS on the 20<sup>th</sup> of the month.

## **6. OBLIGATIONS OF THE PARTIES**

- 6.1. Each party agrees to co-operate and work with the other in good faith to enable the effective performance of the required Services. This includes making available information, decisions and processes as may reasonably be required to implement and deliver the Services in accordance with this Agreement.

### **Role of InternetNZ / DNC**

- 6.2. InternetNZ, through the NZOC and the DNC, shall be responsible for meeting all the obligations and responsibilities specified in the .nz policies and procedures and in the Registrar Authorisation Agreement.
- 6.3. The DNC convenes a Registry Advisory Group (RAG) of which NZRS is a member.
- 6.4. The DNC will consult with NZRS when setting or amending any policies relating to the .nz domain name space to enable NZRS to assess the possible impact on NZRS, the DNS / SRS, or the Services and provide input. Some impacts may require a review of the Services or SLA Standards.
- 6.5. The DNC will respond to any reasonable and relevant questions or requests from NZRS within one business day where it is reasonable to do so, unless the nature of the query clearly specifies a quicker response is required and it is reasonable for the DNC to respond in the quicker time specified in the query.
- 6.6. If, at any time, the DNC has an issue with the management or performance of the .nz registry service, the DNC will raise it directly with NZRS, and will take NZRS's response into account prior to making any public comment.

### **Role of NZRS**

- 6.7. NZRS shall be responsible for performing registry services and shall assume all benefits and liabilities arising in relation to the provision of registry services.
- 6.8. Registry services means services provided as an integral part of the management and operation of the .nz register and includes:
- Connection of suitably authorised registrars to provide domain name registration and Management Services within the .nz TLD;
  - Receipt of data concerning registration of domain names and name servers from registrars;
  - Provision to registrars of status information relating to the .nz TLD;
  - Dissemination of .nz TLD zone files, and management of the .nz zone servers;  
The .nz domain name service must be continuously available with 24-hour Internet Protocol (IP) connectivity to the Internet, 365 days per year. The service must be operated with accuracy, robustness, resilience, and reliability;
  - Performing regular updates of the .nz TLD name servers from the register;

- Dissemination of contact and other information concerning domain name and name server registrations in the .nz TLD;
  - Provision of read/write interfaces to the register for use by registrars;
  - Provision of read only interfaces to the register for registrants and the public (including WHOIS services).
- 6.9. NZRS shall meet all the obligations and responsibilities specified in the applicable .nz policies and procedures and in the applicable Registry Connection Agreement.
- 6.10. NZRS will attend, and contribute to, the Registrar Advisory Group.
- 6.11. NZRS will consult with DNC, when setting or amending any internal NZRS policies affecting Registrars, SRS or the DNS.
- 6.12. NZRS will respond to any reasonable and relevant questions or requests from the DNC or from Registrars, within one business day where it is reasonable and possible to do so, unless the nature of the query clearly specifies a quicker response is required and it is reasonable and possible for NZRS to respond in the quicker time specified in the query.
- 6.13. NZRS will manage the .nz register to meet the service levels specified in Schedule A.
- 6.14. NZRS will manage the .nz DNS Service to meet the service levels specified in Schedule A.
- 6.15. Should, for any reason, the management or performance of the .nz register not meet the service levels in Schedule A, NZRS will notify the DNC at the earliest practicable time.
- 6.16. NZRS will inform the DNC of any action taken by NZRS that changes the status of a Registrar.

## **7. TERMINATION**

- 7.1. DNC or NZRS may terminate this Agreement immediately by giving written notice of termination to the other party if that other party attempts to assign its rights or obligations under this Agreement without the written consent of the other party or becomes insolvent.
- 7.2. DNC or NZRS may terminate this Agreement immediately if:
- 7.2.1. the other party seriously defaults in the performance of its obligations; and
  - 7.2.2. the default is capable of being remedied; and
  - 7.2.3. written notice of that default has been given to the defaulting party; and
  - 7.2.4. the defaulting party has not remedied the default within a reasonable period of time.
- 7.3. If InternetNZ ceases to be the country code manager of the .nz TLD or InternetNZ no longer has the functions, authorities or responsibilities to supervise the

management of the .nz TLD in New Zealand then this Agreement may be terminated at the request of either Internet NZ or NZRS or, if practicable, modified to reflect those changes, to take effect from the same date as those changes.

- 7.4. Upon termination or expiry of this Agreement NZRS shall continue to offer to the DNC such Services under the terms of this Agreement as the DNC may reasonably require while the DNC makes the transition to alternative service providers and NZRS shall be entitled to charge the usual Domain Name fees charged by NZRS immediately prior to termination or expiry until the cessation of all Services.

## **8. CONFIDENTIALITY**

- 8.1. NZRS shall hold and maintain all Confidential Information in strict confidence. NZRS shall effect and maintain adequate security measures to safeguard the Confidential Information from access or use by unauthorised persons and to keep the Confidential Information under NZRS's control. NZRS shall immediately inform the DNC if it becomes aware of the possession, use or knowledge of the Confidential Information by any person not authorised to possess, use or have knowledge of the Confidential Information and shall at the request of DNC provide all such assistance in relation to this as DNC shall require.
- 8.2. NZRS undertakes to ensure that its employees, agents and sub-contractors who need to know the same are aware of and comply with the provisions of this clause in relation to the Confidential Information.
- 8.3. NZRS shall ensure that any sub-contract contains confidentiality provisions consistent with this clause 8. NZRS shall be responsible for the acts and omissions of any employees, agents and sub-contractors as if they were the acts and omissions of the NZRS.
- 8.4. The DNC shall ensure that any sub-contract contains confidentiality provisions consistent with this clause 8. The DNC shall be responsible for the acts and omissions of any employees, agents and sub-contractors as if they were the acts and omissions of the DNC.

## **9. INDEMNITY**

- 9.1. Each party agrees to defend, indemnify and save the other party, its affiliated and subsidiary corporations, its officers, directors, employees, agents, successors, shareholders and assigns harmless from and against all liability, loss, expense, fines, penalties, or damages (including legal costs) to the extent such claim arises out of or is in anyway connected with the non-performance or breach of any obligation imposed on the indemnifying party by the Agreement or other general laws and obligations or by reason of and to the extent of the fraud, negligence or wilful misconduct of the indemnifying party or any agent or employee of the indemnifying party.
- 9.2. The above indemnities shall survive the termination of this Agreement.
- 9.3. No party to this Agreement shall be liable to the other party for loss of profit, production, use, or business which is not reasonably foreseeable.

- 9.4. Notwithstanding any other provision in this Agreement, no action, regardless of form, arising out of any alleged breach of this Agreement or obligation hereunder may be brought by either party more than three years after the cause of action has occurred.

## **10. PROFESSIONAL INDEMNITY INSURANCE**

- 10.1. Both parties will be responsible for their own professional indemnity insurance cover.

## **11. FORCE MAJEURE**

- 11.1. Neither party will be liable for any act, omission, or failure to fulfil its obligations under this Agreement to the extent that such act, omission or failure arises from any cause reasonably beyond its control including acts of God, strikes, lockouts, riots, acts or war or terrorism, epidemics, governmental action after the date of this Agreement, fire, earthquakes or other disasters.
- 11.2. The party unable to fulfil its obligations under this clause will immediately:
- (a) Notify the other party in writing of the reasons for its failure to fulfil its obligations; and
  - (b) Use all reasonable endeavours to avoid or remove the cause of its failure to perform its obligations.
- 11.3. Notwithstanding its obligations under this clause NZRS will maintain full Business Continuity and Disaster Recovery Plans including operational backup strategies in place, for the data, systems, networks and applications to minimise the risk of single points of failure including where appropriate having Geographical (both nationally and internationally) Diversity and Topological (Network) diversity.

## **12. ASSIGNMENT**

- 12.1. NZRS may not assign or transfer its rights or obligations under this Agreement without the prior written consent of the DNC. No such assignment or transfer of rights or obligations will relieve NZRS of any of its obligations under this Agreement.

## **13. AMENDMENTS**

- 13.1. This Agreement can be amended at any time with the agreement of both parties. Any alterations or amendments to this Agreement must be in writing and signed by each party's Representative.

## **14. DISPUTE RESOLUTION**

- 14.1. If any dispute arises in connection with this Agreement, the parties will use all reasonable endeavours to settle the dispute by negotiation, including, if necessary, by a meeting between the DNC and the NZRS General Manager. While the dispute

remains unresolved, the parties will continue to perform all obligations under this Agreement without prejudice to any legal rights they may be entitled to exercise.

- 14.2. If following the dispute resolution procedure set out above, the parties fail to resolve the dispute, then the parties will meet with the Chair of NZRS Board and the Chair of NZOC and endeavour to settle the dispute by negotiation. Should this meeting fail to reach a resolution the dispute will be referred to the President of InternetNZ who will made a final determination, such determination being binding on the parties.

## **15. NO WAIVER**

- 15.1. No failure, delay or indulgence by any party in exercising any power or right conferred on that party by this Agreement will operate as a waiver of that power or right. Nor will a single exercise of any of those powers or rights preclude further exercises of those powers or rights or the exercise of any other powers or rights under this Agreement.

## **16. NOTICES**

- 16.1. Any notice given pursuant to this Agreement shall be sufficiently given if it is in writing and delivered, or sent by pre-paid post, facsimile or email to the Representative of the other party.

- 16.2. The contact details for each party's Representative are:

- (a) For NZRS:

New Zealand Domain Name Registry Limited  
PO Box 24361  
Wellington

Facsimile: 04 931 6979  
Email: registrymanager@nzrs.net.nz

- (b) For the DNC:

The Office of the Domain Name Commissioner  
PO Box 11-881  
Wellington

Facsimile: 04 495 2115  
Email: dnc@dnc.org.nz

- (c) Communications shall be deemed to be received, in the case of a letter, on the second Business Day after posting and in the case of a facsimile or email in accordance with the Electronic Transactions Act 2002 or personal delivery, on the Business Day on which it is despatched or delivered or if despatched or delivered after 5pm on a Business Day or on a non Business Day, on the next business Day after the date of despatch or delivery.

**17. ENTIRE AGREEMENT**

- 17.1. There are no conditions, warranties or other terms affecting the arrangements between the parties other than those referred to in this Agreement and this Agreement contains the whole of the contract between the parties and supersedes all prior agreements and understandings, if any, with respect to the transactions contemplated herein.

**18. SUPREMACY**

- 18.1. If there is any inconsistency between this Agreement and any Service Level Agreement or Service Order then this Agreement shall prevail unless otherwise expressly provided.

**19. SURVIVAL**

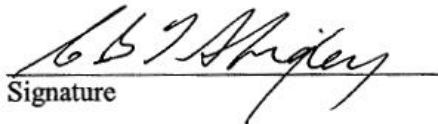
- 19.1. Clauses 8, 9, 10, 12, 14, 15, 19, 20 of this Agreement shall remain in full force and effect following the termination of this Agreement.

**20. INTELLECTUAL PROPERTY**

- 20.1. All Intellectual Property rights associated with the Services including any documentation, processes, tools or software applications created by NZRS shall immediately vest in NZRS as such rights are created and any documentation, shall where applicable, be branded NZRS.

**EXECUTED** as an Agreement by the parties on the date on the first page

**SIGNED** for and on behalf of  
**NEW ZEALAND DOMAIN  
NAME REGISTRY LIMITED**  
By:


  
Signature

Carol Stigley  
Name

**NZRS DIRECTOR**

\_\_\_\_\_  
Title

**SIGNED** for and on behalf of  
**INTERNET SOCIETY OF  
NEW ZEALAND INC**  
By:

  
Authorised Signature

Debbie Morahan  
Name

**DOMAIN NAME COMMISSIONER**

\_\_\_\_\_  
Title

  
Signature

Meru DBLANE  
Name

**NZRS DIRECTOR**

\_\_\_\_\_  
Title

## 21. SCHEDULE A – SERVICE LEVEL STANDARDS

### a) General

NZRS provides, operates and manages the Shared Registry System (SRS) and the Domain Name System (DNS) for the .nz Top Level Domain such that all the Service Levels Standards set out in this Service Level Agreement (SLA) are met or exceeded.

### b) Service Level Standards Measurements

The Service Level Standard targets specified in this SLA are measured and averaged over a calendar month.

The following table is a summary of Service Level Standards:

Service Level Standard	Target	
SRS Availability	99.9% Available	
WHOIS Availability	99.9% Available	
SRS/WHOIS Planned Outages	Single outages $\leq$ 4 hours Total outages $\leq$ 8 hours / month	
SRS Integrity	100% accurate	
SRS Performance	<b>Transaction Type</b>   <b>Target Response Times</b>	
	Averaged over a month at the SRS front-end	
	DomainDetailsQry	$\leq$ 1.5 seconds
	Whois	$\leq$ 0.8 seconds
	UDAIValidQry	$\leq$ 0.8 seconds
	DomainUpdate	$\leq$ 0.8 seconds
	DomainCreate	$\leq$ 0.8 seconds
	GetMessages	$\leq$ 0.8 seconds
	RegistrarDetailsQry	$\leq$ 10.0 seconds
	RegistrarAccountQry	$\leq$ 1.5 seconds
	Averaged over a month outside the firewall	
	WHOIS Service	$\leq$ 1.5 seconds
DNS Service Availability	100% Available The DNS service should not be affected by any DNS server planned outage	
DNS Server Planned Outages	Single outages $\leq$ 4 hours Total outages $\leq$ 8 hours / month Outages should be planned so that only one server is unavailable at any one time.	
DNS Integrity	100% accurate outside Zone Push window	
DNS Availability	100% Available	
DNS Zone Push (from primary to secondary DNS Servers)	$\geq$ 12 Zone Pushes per day $\leq$ 20 minutes DNS Zone Push Window	
DNS Performance	<b>Transaction Type</b>   <b>Target</b>	
	UDP	$\geq$ 1200 transaction / sec $\leq$ 5 millisecs latency
	TCP	$\geq$ 120 transaction / sec $\leq$ 50 millisecs latency

The Service Level Standards are further defined in the following sections.

## c) Shared Registry Services

### 1. SRS Availability Standard

#### **SRS Availability Objective**

- To monitor and manage the SRS Service availability.

#### **Definition**

Availability of the SRS requires that Registrars are able to successfully complete valid read and update (write) transactions to SRS;

#### **SRS Availability Target**

The required SRS online service availability is 99.9% (excluding planned outages).

#### **Planned Outage**

Refer to the Planned Outages Standard in section 21 c) 3.

#### **Calculation of SRS Availability:**

Percentage available = (Scheduled availability – Unscheduled Outage time) / (scheduled availability) \* 100.

Scheduled availability is the number of minutes in the calendar month period being measured.

Unscheduled outage time is calculated by summing up the times of all of the individual outages that occurred during the period. Elapsed time of an outage is measured in minutes from the time the SRS Service is unavailable (see availability definition above) until it is again available.

Unscheduled outage time will not include approved planned outages for maintenance or shutdown times as documented in the NZRS Operations manual or Change Management process.

#### **Method and reporting**

All outage incidents are recorded and SRS Service Availability is tracked on a per incident basis but measured and reported on monthly.

### 2. WHOIS Availability Standard

#### **WHOIS Availability Objective**

- To monitor and manage the WHOIS Service availability.

#### **Definition**

Availability of the WHOIS requires that Registrars and Registrants are able to successfully query the WHOIS service in accordance with the .nz WHOIS Policy.

### **WHOIS Availability Target**

The required WHOIS online service availability is 99.9% (excluding planned outages).

### **Planned Outage**

Refer to the Planned Outages Standard section 21 c) 3.

### **Calculation of WHOIS Availability:**

Percentage available = (Scheduled availability – Unscheduled Outage time) / (scheduled availability) \* 100.

Scheduled availability is the number of minutes in the calendar month period being measured.

Unscheduled outage time is calculated by summing up the times of all of the individual outages that occurred during the period. Elapsed time of an outage is measured in minutes from the time the WHOIS Service is totally unavailable (see availability definition above) until it is again available.

Unscheduled outage time will not include the approved planned outages for maintenance or shutdown times as documented in the NZRS Operations manual or Change Management process.

### **Method and reporting**

All outage incidents are recorded and WHOIS Service Availability is tracked on a per incident basis but measured and reported on monthly.

## **3. SRS/WHOIS Planned Outages**

### **SRS/WHOIS Planned Outage Objective**

To manage and monitor the SRS/WHOIS planned outages within the defined planned outage parameters.

### **Definition**

A planned outage of the SRS/WHOIS relates to events that are scheduled and notified in advance to SRS/WHOIS users. It includes periodic maintenance and urgent, but controlled, maintenance to correct software or hardware problems.

SRS/WHOIS Planned outages must be published prior to the outage start time.

### **Target**

- No single planned outage will be scheduled to exceed 4 hours.
- The total of all planned outages are to be less than 8 hours in a month.

#### **Calculation of total planned outage time**

- Each individual planned outage is recorded.
- The total of all the individual planned outage times in minutes in the calendar month period being measured.

#### **Method and Reporting**

All planned outages are recorded on a per outage basis but measured and reported monthly.

### **4. SRS/WHOIS Performance**

#### **SRS/WHOIS Performance Objective**

To continuously monitor all Registrar SRS transaction response times at the SRS front-end servers.

To continuously monitor the public WHOIS service response times from a point outside the firewall.

Ensure that the systems are managed and tuned to maximise the transaction performance to meet the defined parameters.

#### **Definition**

To measure the average transaction response time for all valid Registrar SRS transactions at the SRS front-end servers.

To measure the average WHOIS service transaction response time at a point immediately outside the firewall to the SRS front-end WHOIS server, by periodic active WHOIS queries.

All Registrar transactions with the SRS are made through an XML-based protocol. A single 'XML request' may contain one or more transactions. A single 'XML response' may contain an error response or one to many valid responses that relate to the transactions in the 'XML request'.

Requests made to the public 'WHOIS' service use the WHOIS protocol documented in RFC 3912.

The following transactions are time critical transactions and have defined target response times:

<b>Transactions</b>	<b>Target Response Times</b>
<b>Averaged over a month at the SRS front-end</b>	
DomainDetailsQry	≤ 1.5 seconds
Whois	≤ 0.8 seconds
UDAIValidQry	≤ 0.8 seconds
DomainUpdate	≤ 0.8 seconds
DomainCreate*	≤ 0.8 seconds
GetMessages	≤ 0.8 seconds
RegistrarDetailsQry	≤ 10.0 seconds
RegistrarAccountQry	≤ 1.5 seconds
WHOIS Service	≤ 1.5 seconds
<b>Averaged over a month outside the firewall</b>	

**Note:** a minimum of 100 transactions/month for any of the transactions above is required to be statistically significant to be included in the SLA measurement. The target transaction response times have been determined and calculated based on current observed history and trends over the last 2 years.

\* Excludes the period around the release domains day end process. This is a known period of registrar behaviour that severely impacts the DomainCreate transaction response times.

### **Exceptions**

Registry transactions are excluded from the response time calculations.

As some transactions can contain multiple requests and/or multiple types of transactions then these transactions are subject to the Registrar behaviour in using the Registry. Should the usage patterns change this could change the mix of transaction types and the number of requests. In turn this could change the volume and response times. Should this happen it may be required to review the response times in the light of this new behaviour and trends.

It should be noted that a Registrar's system can either by design or error create excessive transaction rates that can cause the performance to be sub-optimal and therefore can cause the target response times to be exceeded. These events will be fully investigated and reported. Regular periods of excessive transaction rates that are known and accepted will be excluded from the calculations.

### **Measurement Interval**

- SRS Front-end Transactions response times are recorded as the transactions happen and the response times are averaged.
- The WHOIS service transaction will be measured from outside the Firewall and the response times are averaged.

### **Reporting**

Average Response times are reported on monthly.

## 5. SRS Integrity

### **SRS Integrity Objective**

To monitor the SRS integrity to ensure the data received is accurately; stored, retrieved, disseminated; and transactions are processed in the order they are received.

### **Definition**

Integrity of the SRS requires ALL the following to be met:

- the receipt and retention of data concerning registration of domain names and name servers from registrars is accurately recorded in the SRS database, in the order they are received, at the time of receipt;
- the creation and dissemination of .nz TLD zone files to the .nz zone servers is an accurate representation of the SRS database at the time the zone file update is created;
- dissemination of contact and other information concerning domain name and name server registrations in the .nz TLD is a true representation of the data stored in the SRS database at the time of access;
- the provision of information via the public WHOIS service is an accurate representation of the data stored in the SRS database at the time of access.

### **Target**

The SRS data is required to be 100% accurate with no valid complaints of data integrity.

### **Method and Reporting**

SRS data integrity is tracked and reported on an exception basis in the scheduled monthly reports.

All complaints will be totalled and reported on during the reporting period.

## **d) Domain Name Server Services**

### **Domain Name System (DNS) Standard**

#### **Business Objective**

To provide the DNS service for the .NZ Top Level Domain (TLD), this includes:

- The DNS service is always (100%) available, accessible and current;
- Receipt of domain name delegation and glue information from the SRS;
- Dissemination of .nz TLD zone files, and management of the .nz zone servers;
- Dissemination of delegation and glue information concerning domain name in the .nz TLD.

Note:

- To minimise the risk of single points of failure it is required to have geographical (both nationally and internationally) diversity and topological (Network) diversity.
- That the geographical and topographical diversity requirement is designed with the possibility that some servers may cease to be available at any given time, in such situations that the routing will allow for continued access to a DNS service.

## 1. DNS Performance

### DNS Performance Objective

To manage and monitor the .nz DNS Servers transaction response times.

### Definition

Measure the ability to service the query load with the listed average transaction response time within the DNS servers for the following range of time critical transactions on an agreed schedule:

UDP query load and average transaction latency for delegation and glue queries	The DNS servers should exceed the ability to answer 1200 UDP transactions per second with less than 5 milliseconds of average latency.
TCP query load and average transaction latency for delegation and glue queries	The DNS servers should exceed the ability to answer 120 TCP transactions per second with less than 50 milliseconds of average latency.

These measurements exclude the period during which zone file are transferred.

### Measurement Interval

DNS Service performance is tracked and measured on a daily basis but reported monthly.

### Reporting Period

Monthly.

## 2. DNS Planned Outages

### DNS Planned Outage Objective

To manage and monitor the DNS Servers planned outages within the defined parameters, to ensure that the DNS Service is not disrupted.

### Definition

A planned outage of any of the DNS servers relates to approved events that are scheduled and notified in advance by NZRS. It includes periodic maintenance and urgent, but controlled, maintenance to correct software or hardware problems.

## **Secondary DNS Servers**

NZRS owns and maintains a number of Public DNS servers with one being located at each of the SRS primary and secondary hosting sites. Additional secondary DNS servers are located at an alternative site/s.

A planned outage of a .nz DNS server should not be scheduled at the same time as a planned outage for any of the other .nz DNS servers.

Note: NZRS contracts with a number of third party suppliers to provide additional secondary DNS services.

## **Calculation of total planned outage time**

- Each individual planned outage is recorded.
- The total of all the individual planned outage times in minutes in the calendar month period being measured.

## **Method and Reporting**

All planned outages are recorded on a per outage basis but measured and reported monthly.

## **3. DNS Integrity**

### **DNS Integrity Objective**

To manage and monitor the integrity of the .nz TLD zone files and the .nz zone file servers.

### **Definition**

The Integrity of the DNS Service requires ALL the following to be met:

- All zone files are securely stored and provide accurate delegation and glue information;
- The accurate dissemination of .nz TLD zone files to the .nz zone servers;
- All DNS Servers must be up-to-date with the currently disseminated .nz zone file and provide exactly the same information when accessed outside of the agreed zone push timing window;
- During the zone push window time all DNS servers should respond using either the current (new) or the immediately preceding (old) zone file.

### **Target**

The DNS Zone files are required to be 100% accurate, ensuring consistency across all DNS servers within the agreed period after the scheduled zone push, excluding servers in a planned outage.

### **Method and Reporting**

DNS Service Integrity is tracked and reported on a per incident basis but measured monthly.

#### **4. DNS Service Availability**

##### **DNS Service Availability Objective**

To manage and monitor the availability of the DNS Service for the .nz TLD.

##### **Definition**

Availability of the DNS Service requires ALL the following to be met:

- 100% of internet users valid DNS requests received successfully query the delegation and glue of a domain in the .nz TLD;
- the dissemination of .nz TLD zone files to the .nz zone servers;
- A DNS server is available when it responds authoritatively to valid queries within the required transaction response time using the current zone file when accessed outside the agreed zone push window time;
- During the zone push window time all DNS servers should respond using either the current (new) or the immediately preceding (old) zone file.
- At least 50% of the published DNS servers must be available at any one time. In the event that less than 50% of the published DNS servers are available then an exception report will be provided to the DNC.

##### **Target**

The DNS Service online availability is required to be 100% available at all times, including during planned outages.

##### **Calculation of DNS Service Availability**

- $\text{Percentage available} = \frac{(\text{Scheduled availability} - \text{Any outage time})}{(\text{scheduled availability})} * 100.$
- Scheduled availability is the number of minutes in the calendar month period being measured.

##### **Calculation of DNS Server Availability**

- $\text{Percentage available} = \frac{(\text{Scheduled availability} - \text{Unscheduled Outage time})}{(\text{scheduled availability})} * 100.$
- Scheduled availability is the number of minutes in the calendar month period being measured.
- Unscheduled DNS server outage time is calculated for each DNS server by summing up the times of the individual DNS server outages that occurred during the period. Elapsed time of an outage is measured in minutes from the time the DNS server is unavailable (see availability definition above) until it is again available.

##### **Method and Reporting**

DNS Service Availability is tracked and reported on a per incident basis but measured monthly.

If any of the DNS servers that provide the DNS service fail for greater than 5 minutes in a 24 hour period then an exception report will be provided in the monthly report to the DNC. An exception report will also be provided to the DNC should any of the DNS servers not meet 99.9% availability over a calendar month.

## **5. DNS Zone Push**

### **DNS Zone Push Objective**

To manage and monitor the scheduled regeneration and propagation of the .nz zone file from the primary DNS servers to the secondary DNS servers within the zone push window.

### **Definition**

The .nz DNS Zone Push requires ALL the following to be met:

- The zone file is regenerated with the correct format and content from that received from the SRS database and available to disseminate within the required timeframe;
- The dissemination of .nz TLD zone files to the .nz zone secondary DNS servers;
- Each DNS server must receive the zone file and make them available for use within the required timeframe;
- The DNS zone push window is defined as an agreed duration; starting from the time the primary name server notifies the secondary name server that an updated zone file is available. The DNS zone push window duration may be altered by agreement with the DNC as NZRS business requirements change.

### **Method**

DNS Zone pushes should occur at an agreed schedule. The timetable for Zone pushes is published on the NZRS website.

DNS Zone Push Window	20 minutes
DNS Zone Push Frequency	Not less than 12 per day

### **Measurement and Reporting**

The DNS Zone File Push to the Secondary DNS servers is tracked and reported monthly by exception.

## **e) Management and Operations**

NZRS will manage and operate the Register and DNS Systems in a professional, business and security aware manner to industry best practice that is appropriate to operating the Register as defined in the Best Practice Guidelines for ccTLD

Managers, version 4.1 – June 2001 which is available at the following website location: <http://www.dnc.org.nz/>

Management and operations includes:

**1. Change Process**

- NZRS will maintain a detailed process for managing changes and updates to the SRS/DNS software and associated systems;
- NZRS will provide registrars with advance notification of any change to SRS or related systems to enable registrars to upgrade their own systems. The length of such notification will be dependent on the scale of urgency and change;
- NZRS will ensure that there is a software maintenance programme in place to handle changes and modifications to software architecture maintenance.

**2. Security**

- NZRS will ensure that the SRS and DNS systems are maintained in physically secure locations.
- NZRS will maintain a security policy and manage access to the systems to industry best practice.
- NZRS will maintain full Business Continuity and Disaster Recovery Plans including operational backup strategies in place, for the data, systems and applications.
- Regular security audits will be undertaken.

**3. Provisioning**

- NZRS will provide the IT Environment required to operate the Register and DNS Services including the applications, hardware, system software, databases, system administration utilities and networks.
- NZRS will manage the physical environments supporting the IT Environment. This includes the hosting and housing of the IT environments. They should be in line with best business practice.

**4. NZRS Contact Process**

- Processes for contacting NZRS are published on the NZRS website.

## f) Reporting

- NZRS shall report monthly against the register performance and register management standards specified to the DNC. This report should also include any relevant reports and any other material reasonably requested by the DNC.
- NZRS will supply all the reports as specified in this section on or before the 9<sup>th</sup> working day of the month.
- The DNS Server reporting will be for a minimum of the three NZRS DNS Servers moving towards reporting against all seven servers by 01 April 2007.
- NZRS and the DNC will provide any such ad hoc reports as are reasonably requested by the other.
- NZRS will contribute to the joint monthly .nz newsletter produced by the DNC.
- The following reports will be provided in a format as agreed from time to time.

<b>Report description</b>	<b>Frequency</b>
<i>General report</i>	
SRS and DNS Performance as per Schedule A. Response times by transaction, for previous month, YTD (where detail available).	Monthly
Annual report against performance and statistics. Annual update on Business Continuity/Disaster Recovery measures implemented or improvements made.	Annually Annually
Complaints received if any, including status and resolution.	Monthly
Reporting against performance and management standards, response times to emergencies, downtime of SRS/DNS both scheduled and unscheduled as per Schedule A.	Monthly
Registrar activity – those connected / disconnected or action taken against.	Monthly
<i>Statistical/System reports</i>	
Number of registrations, YTD, (where detail available) <ul style="list-style-type: none"> <li>• total</li> <li>• per second level domain</li> <li>• per registrar</li> </ul>	Monthly
Number of cancellations, pending release, released, YTD, (where detail available) <ul style="list-style-type: none"> <li>• total</li> <li>• per second level domain</li> <li>• per registrar</li> </ul>	Monthly

Number of changes, YTD, (where detail available) <ul style="list-style-type: none"><li>• total</li><li>• per second level domain</li><li>• per registrar</li></ul>	Monthly
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