

Major data restructuring

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1. Executive Summary

We are about to embark on the biggest data restructuring exercise that we have undertaken. This document explains what it is and why it is so important and also details the implications of this change.

1.1 Problems

The main problem driving this restructuring is that our information about customers is not joined up.

- we do not know if a tagholder is also a registrant of some domains,
- we cannot tell the difference between multiple domains with the same registrant and those where the registrant information just looks the same.
- we cannot tell if two contacts with the same name and address are the same person or not.

1.2 Requirements for online systems

Our data structure determines much of the functionality available within our online services and so certain requirements of the online systems need to be borne in mind whilst designing and implementing a new data structure. These are:

- To be as flexible as possible, designing a system that meets the needs of as many customers as possible without excessive development cost or end user complexity.
- To make our systems as simple to use as possible.
- Wherever possible to join up data and reuse it so that data duplication is kept to a minimum.
- We do not want a system where a non-tagholder can use the system to work effectively like a tagholder by registering domains in other peoples names and then managing them all through our web interface.
- We do not want the legal registrant to be locked out of the online system by the tagholder or a third party.

1.3 Proposed solution

The basic proposal is to join up all of this information by creating a data structure that allows that to happen. This starts with creating an account for each customer, under which records are kept of each service that they take from us.

Some of these services are well known, such as 'tagholder' or 'member', but in addition we will introduce the service of 'registrant' that then joins up the registration of multiple domains for one legal registrant.

Finally we will introduce a new table of contacts, with each contact having a unique identification number to enable it to be used in many places. As part of this change some of the different types of contacts and number of contacts recorded for different types will change. For example, multiple billing contacts will be allowed per tag, whilst registrant technical contacts will disappear.

1.4 Policy implications

None of the current policy on tagholder access is changed by this proposal nor does it prevent any potential changes from being introduced. In other words, with this new structure tagholders still cannot do a registrant transfer or a surrender, but if that policy is changed then it will be just as easy to implement with this new data structure as before.

There is already an agreed strategy to implement Extensible Provisioning Protocol (EPP) the international standard for access to registry systems. EPP requires access to our data in a particular way that will be extremely difficult to develop without a restructuring similar to that proposed.

2. Problems and requirements

2.1 Accounts

The first problem is that our information is not joined up as it should be. For example we could at present have a tagholder who also has a PRSS contract and be the registrant of some domains names and yet we cannot link these together and see them all as the same company that has several dealings with us. This is because all of those things are dealt with separately within our systems.

That has implications in all different areas of the business, for example if we knew that a particular tagholder was about to have their tag withdrawn for non-payment of bills would we still give them a PRSS contract?

The second problem comes when we add on a new service (such as whois2). As each of our current systems is really a custom system just for that one purpose we cannot just reuse an existing system to handle this new service. As a result there is a high cost in setting up a new system to manage every new service.

2.2 Registrants

We cannot tell the difference between multiple domains with the same registrant and those where the registrant information just looks the same. For example, if we have two domains registered to Mr Smith then we do not know whether that is the same Mr Smith or completely different Mr Smiths. Even if the addresses given are different we cannot be sure that Mr Smith has not changed address and not notified us.

This causes two main problems. First, if a registrant wants to do a bulk Tag Change or Registrant Transfer then we have to do all sorts of complicated data comparison to determine if they are the same person that in the end is either human verified or left to chance.

Second, some people end up getting lots of 'Confirmation of registration' letters, one per domain, and have to change their details individually for each domain name.

2.3 Contacts

In our current setup the registrant contact, admin contact, technical contact and billing contact are stored with the domain name. If the same information is needed with two domain names then it is duplicated for each one rather than being held just once and then linked back to each domain.

There are no unique identifiers for these contacts so the only way of knowing if two contacts are the same is by checking to see whether the name and address is identical. Small changes may be put down to a spelling mistake but even a small change between two contacts may actually indicate a different person (for example if there are two Mr Smiths, one at 47 Acacia Avenue and one at 27 Acacia Avenue we have no way of telling if they are the same person)

There are also huge numbers of unnecessary, unused and unreliable admin, billing and technical contacts.

Then separately we have another set of contacts (authorised signatory, technical, billing and admin) for tagholders and members. Again we do not have a clear and common understanding of how each of these is used. The information on these other contacts is not visible to tagholders and members so there is the real possibility that much of it is out of date or otherwise inaccurate.

The final problem is that there is a requirement by some customers for us to allow more than one contact of a particular type in some places. For example, many tagholders want to have more than one billing contact per tag.

2.4 Online systems

There are a number of areas relating to the way online services work that may have a substantial impact on the solution and so need to be clearly stated. These are:

2.4.1 Principles

- To be as flexible as possible, designing a system that meets the needs of as many customers as possible without excessive development cost or end user complexity.
- To make our systems as simple to use as possible.
- Wherever possible to join up data and reuse it so that data duplication is kept to a minimum.

2.4.2 Restrictions

We do not want a system where a non-tagholder can use the system to work effectively like a tagholder by registering domains in other peoples names and then managing them all through our web interface.

We do not want the legal registrant to be able to be locked out of the online system by the tagholder or a third party.

2.4.3 Levels of access

With the online system we will give tagholders the ability to give their staff different levels of access. For example they can say that some staff can do the billing, others only the registration etc. However we will not build in different levels of access at the Automaton/EPP layer. These are not intended to be used directly by individuals but by automated systems. Anyone wanting a more granular security model should implement that for themselves using the Automaton/EPP as the backend.

2.4.4 Split of functionality between EPP/Automaton/Website

The Automaton and EPP will only do those things for which they were originally designed, that is the management of information that appears in the registry. The associated functionality of managing tagholders finances etc will only be available through the website, such as changing mailing list subscriptions or getting a financial statement.

2.5 Scenarios

2.5.1 Scenario – Standard big organisation as a registrant

In a big organisation they are likely to have multiple domain names, often spread across a number of tags. They will have more than one person who administers domain names online and they will often work in teams rather than individuals. So for example they will expect their tagholder to send bills to their billing team rather than a named person. However all of their domain names will be for the same legal registrant.

We should be able to support this fully, though we want to avoid the registrant thinking there are more facilities available than there actually are. For example we do not want them thinking they can change their billing details through this and have the tagholders send the bills to a different place.

2.5.2 Scenario – Individual registrant with a few domain names

This person would probably want to have just one contact, themselves and not have to fiddle with setting that in lots of different places. They want the system to be as uncomplicated as possible since they are going to use it in an uncomplicated way.

2.5.3 Scenario – One tagholder has different billing and technical contacts for some domains

There are tagholders who want some domains to have one technical contact and others to have a different one. The current situation is that whilst they can specify different technical and billings contacts on a per domain basis these are never used. We actually only use the technical and billing contacts for the tag.

The current solution to this is for tagholders to have multiple tags. However that does mean they need one tag for each combination of different contacts that they want.

2.5.4 Scenario – Web designers who are not tagholders

A web designer (who is not a tagholder) might register a name on behalf of a registrant with a tagholder and expect to be able to administer the domain name on behalf of the registrant. In this case should we support this? If we allow multiple contacts then this may be very difficult to stop though at least we will not be actively supporting it.

2.5.5 Scenario – Umbrella company for lots of other companies

We might have one company that is an umbrella company for lots of other companies and manage domains for the whole group. It would therefore want to have domains registered for different legal registrants on the same account.

The problem with allowing this is that it would require us to allow users of the online system to specify a different legal registrant for each domain, which could then be easily exploited by a third party to operate as a tagholder without being a tagholder.

The other problem is that we then need to have a separate record of the umbrella company (the account holder name) and so we end up needing to manage changes to those details as well.

2.5.6 Scenario – Some personal some as a sole trader

It is perfectly possible for one individual to have several domain names, where they use some on a personal basis and some as a sole trader. The legal registrant is the same for all of them but for some they are categorised as an individual and others as a sole trader.

This means that they need to be able to identify their registrant type on a per domain basis but only where the types can be different but the legal registrant stay the same. If however the registrant type is set just once, at the account or registrant level then they will require two different accounts.

2.5.7 Scenario – Outsourced DNS provider

There are a number of tagholders that are companies that specialise in intellectual property management and so need to be a tagholder to manage a domain portfolio on behalf of customers. Some of these choose to outsource the DNS provision to a third party or for the registrant to do this themselves.

In this case the external DNS provider has to go through the tagholder to have the DNS details updated. This is the type of thing the technical contact was created for but has never been used for. An alternative approach would be to have two tags per domain, with one of them restricted to technical functions, which currently would only be changing the nameservers.

2.5.8 Scenario – Tagholder with resellers

There are many tagholders who operate a reseller network, though those networks work in a number of different ways. In some cases the reseller is quite happy that the registrant knows about the tagholder, in other cases they want to conceal that part of the relationship. Some tagholders give the reseller details as the technical contact whilst others provide no details at all.

We do not do anything that directly supports the operation of a reseller network. However by allowing multiple contacts or making it easier to get multiple tags then we may inadvertently support a way of working through our online systems that is not our intention to support.

3. New data structure in outline

The basic idea is to join everything up and wherever possible only store one copy of something. This will be done in three specific areas:

- Introducing two new concepts, accounts and services.
- Changing the way some existing services work.
- Joining up registrants and contacts and changing the way we use them.

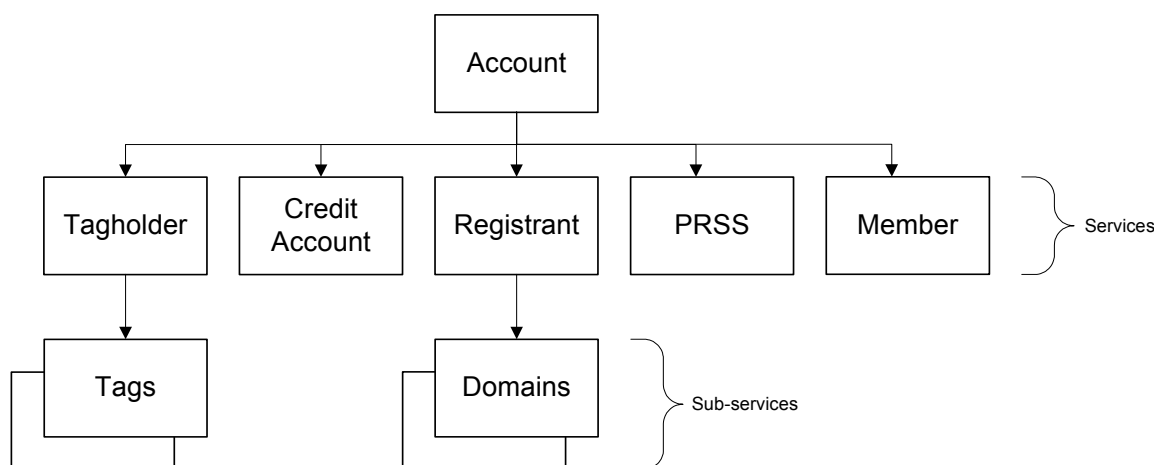
3.1 Accounts and Services

A service is one of the things we allow people to sign up to, a list that currently includes becoming a registrant, member or tagholder. It also includes the lesser known services of PRSS and whois2.

An account is what everyone has, who has a service with us. If you have more than one service then they all go onto the same account. That way we join up the information about our customers and they get to be treated in a joined up way.

A sub-service is something that sits below the service level and you can have many of them for one service. For example tags are a sub-service of the tagholder service.

NOTE: In ordinary circumstances, there should be a one-to-one relationship between an account and a legal entity. The one exception is where a person has one account as a private individual and one as a sole trader, even though, strictly, these are the same legal entity.



3.1.1 New services

This structure introduces a number of new services, which are explained later on in this document. They are the Registrant service, Credit Account and Tagholder.

3.1.2 Account and service interaction

There are some specific points about the way that accounts and services interact

- Whenever any person/organisation signs up for a service they get an account with us as well.
- There is no way of getting an account without at least one service attached to it.
- If the same person/organisation takes multiple services from us then this all goes onto the one account.
- When someone cancels a service (or we do), then if there are no other services on that account then the account is also cancelled.
- Each account holder can only have one instance of each service. In other words only one registrant contract, one membership, one tagholder agreement (but of course multiple tags), one PRSS contract and so on.

Of course there may be certain circumstances when one person/organisation ends up with two accounts and so a process will exist to merge two accounts. This will work on the basis that one account is designated as the main account and the second account is added into that in the best possible way.

3.2 Contacts

To be clear a contact is a name and possibly an email address and possibly a postal address and possibly telephone/fax details. We currently use admin, technical, billing, registrant and authorised signatory as our contacts for domains, members and tagholders.

Contacts are now stored in a separate database with each contact having a unique identifier (e.g. C000123) and that identifier used wherever a contact is required. So all of the places where name and address details are currently stored will be changed to have a pointer to a contact record in the contact database.

The number of contacts allowed can now be set on a per service/per type basis. For example we could decide that a tag can have up to nine technical contacts but only one billing contact. In any case the maximum number of contacts of any one type can not be set more than nine.

Contacts can either be email only or also require a full address. In certain places a full address may be required whereas in others just the email address will do.

Contacts can also be either an individual or a role. No restrictions will be placed on when a role can be used, but we will ask people to indicate to us if a contact is an individual or a role. The name and address of the person who signs a contract is kept separately.

Every contact will be able to login to the online service. What they do will be limited to the type of contact they are in each individual service.

NOTE: Each contact can only be on one account. In other words, if one person is a contact for a tag with tagholder X but they also work for tagholder Y, then they cannot use the same contact ID as a contact for a tag for this second tagholder as it is on a different account. They will need two different contact records, one for each account.

3.2.1 Main contacts

For each contact of a particular type that exists attached to a service, one of them must always be nominated the 'main contact' for that type. For example, if the PRSS service allows technical contacts to be associated with it then one of those must be nominated the main technical contact.

NOTE: When the TH support team need to contact an admin contact they will always contact the main admin contact. This applies equally to other types of contact and other people who might need to contact them.

3.2.2 Changes by contact type

There are a number of changes that are specific to the type of contact.

Contact Type	Impact of changes
Authorised Signatory	This will be done away with entirely. A record will be kept of the person who signed the contract and their role and address details but otherwise there is no need for a separate authorised signatory. If we need to make a complaint, put someone on notice or cancel a contract then we use the main admin contact.
Admin	The admin contact becomes the person who can do everything within the service they are set as the admin contact for. For example: if I am the admin contact on a tag then that is the same as having the PGP key for that tag. One admin contact must be nominated as the main admin contact and we must have full address details. This is used where the authorised signatory has been used until now. Only an admin contact can manage contacts.
Billing	One billing contact must be nominated as the main billing contact. On the online system billing contacts are limited to looking at the billing/finance side of each service.
Technical	This contact will also be done away with for members and registrants but kept for tagholders and PRSS, where it will still be used. A case by case decision will be taken for new services.

	On the online system technical contacts are limited to looking at the technical side of each service.
Service User	This is a new type of contact that can do everything an admin contact can except that it cannot manage contacts (or anything else we decide is admin type stuff). We never contact a service user.
Registrant Contact	This is replaced by the main admin contact for the registrant object. For further details see section 4.2.1

3.3 Addresses

Addresses are also now stored in a separate database and each address has a unique identifier (e.g. AD0001234) that is used whenever an address is required. This allows all the addresses for a particular account to be changed in one simple operation.

However no specific template or functionality will be provided to allow the manipulation of addresses objects, that will all be done by manipulating contact or account objects as they contain address information within them.

4. New structure in detail

4.1 Account data

The data held for each account is as follows. The whois data for a registrant is a publication of this information.

Data	Description
Account Name*	This is the name of the person/organisation that holds the account. In other words the legal entity that we contract with. This is the equivalent to the 'for' field for domains, and that information will move here during the restructure process. All requests to change this will invoke a manual referral. Which team gets it depends on the services this account has and the status of those services.
Address*	This is the address of the account holder. This is the same as the registered/main address from the member/tagholder record. For registrants this is the address of the registrant contacts as they will not be allowed to enter another address. This no longer needs to be the legal address.
Organisation Type	This is the type of company/organisation of the account holder. This is the same as the old registrant type and tagholder/member type so it is now used for all accounts whether or not they are a registrant or tagholder.
Company Number	The company number is now also held at the account level, since this is for a single legal entity.
Trading Name*	Any account may specify a different trading name from the Account Name, which will be displayed on the WHOIS in addition to the Account Name.
Opt-out	If the entity is a consumer then it can request an opt-out from our data publication systems, such as the WHOIS and PRSS.

NOTE: All those data items marked with an asterisk* are displayed on the WHOIS, unless this account is opted-out.

Contact Roles	Notes
Main Admin	This is the overall admin contact for the account. Only admin contacts at this level (main or otherwise) can sign up for a new service.
Admin	These are other contacts with overall responsibility for the account.
Main Billing	When we implement a unified billing system this is the main contact for that. Until that time they can access the billing bits of each system individually.
Billing	These are other contacts that can use the unified billing system.

NOTE: If you have an account with just one service on it then the above contacts are not viewable or editable and they are set the same as the contacts for the service. This reduces confusion to that majority of customers who will only have one service and so do not need to know about this additional level of detail.

4.1.1 Linked accounts

Whilst accounts are intended to be the top level object, they might need to be linked together for anti-abuse purposes or for voting rights calculations. These two types of links will be shown independently for each account.

4.2 Service: Registrant

We already understand registrants but not in a very joined up way. For example if you want to update your details then you can use the 'Confirmation of registration' online system, but you have to do that per domain, not per registrant. If you want to change a tag then you can do that for a group of domains but by a completely different method.

The registrant service is the new way of bringing all of these together so that a registrant can see all of their domains joined up and then work on them altogether. When a person/company get a domain name they sign up to our Term and Conditions (Ts&Cs). This contractual relationship is the registrant contract and the basis for the registrant service.

Registrants will then have access to an online system through which they can update their details, change their tags etc.

NOTE: The information for the legal registrant, which includes who the domain is 'registered for' and the whois address information is actually held at the account level not at this level. At this registrant level we hold the registrant type, opt-out information and the links to the registrant contacts.

NOTE: Contacts are no longer set on a per domain basis, they are only set on a per registrant basis. This means that a registrant cannot assign different admin contacts per domain or different billing contacts (if the domains are Bill Customer) per domain, all domains must share the same contacts.

Data	Description
There is no specific data at the registrant service level, other than the contacts shown below.	

4.2.1 Contacts

NOTE: Just to make sure this is very clear. There will no longer be any contact information held on a per domain basis. All information will either be held by registrant or by tag. As a tagholder can have multiple tags they can set different contacts for different domains that way. Registrants however have to have the same contacts for all of their domains.

The registrant contact, that is currently held per domain, is moved to two new places. Firstly the address data becomes the address of the account and then the name data is used to create the main admin contact for the registrant. This main admin contact is equivalent to the current registrant contact.

There will no longer be a technical contact that could point to a registrant. Currently the technical contact that is set on a per domain basis, could contain registrant information. The new registrant object will not cater for a technical contact, even for direct registrations. Maybe when we have DNSSEC up and running and we need a way for all registrants to send us their keys directly we could change this.

Some specific rules are in place for registrant contacts

- Three admin contacts and three billing contacts will be allowed per registrant.
- All of these contacts will not be allowed to specify separate postal addresses, they must all share the same postal address as the account. They will have different email addresses.
- Billing contacts are only allowed if the registrant has a direct billing relationship with Nominet. In other words if they have domains that are Bill Customer or on the Nominet tag.

- Invoices to registrants, whether proper or proforma, will go to the email address of the billing contact if one exists otherwise it will go to the email address of the main admin contact.

Contact Roles	Notes
Main Admin	This is the main admin contact for the registrant service. This is forced to have the same address as the account.
Admin	These are other contacts with overall responsibility for the registrant.
Main Billing	This is the main billing contact for the registrant service. This is forced to have the same address as the account
Billing	These are other contacts with billing responsibility for the registrant.

4.2.2 Sub-service: Domain

There are quite a lot of items of data at this level, though most of them are only used by internal processes. The table below shows those that have a public usage, excluding those that are deprecated.

Data	Description
Key, Suffix	The domain name split into two parts, the first label and everything else that follows it.
Instance	This is used to distinguish between different registrations of the same domain name. Of course there cannot be two active registrations at the same time so the instance goes up by one each time.
Dns0 ... Dns9	Nameservers
Notes	The ubiquitous notes field as used by tagholders
First-bill	The chosen option for billing of initial registration fees: TagHolder (default) – th, Bill Customer (i.e. the registrant) – bc.
Recur-bill	The chosen option for billing of renewal registration fees: Tag Holder (default) – th, Bill Customer (i.e. the registrant) – bc.
Auto-bill	Number of days before expiry when domain will be automatically renewed
Next-bill	Number of days before expiry when domain will be automatically renewed at just the next renewal.
EPP-id	Special ID used for EPP to identify this domain.
Purchase-order	Will be used to allow tracking of orders through to billing.

4.3 Service: Tagholder

To be clear, the service someone takes with us is signing up to the Tagholder Agreement (THA), it is not taking a tag because you might get many tags for just one THA.

Data	Description
There is no specific data at the tagholder service level, other than the contacts shown below.	

4.3.1 Contacts

NOTE: Contacts exist at both the tagholder level and the tag level, with those at the tagholder level being used as defaults when a new tag is created.

A tagholder can have up to nine admin contacts, nine billing contacts, nine technical contacts and nine service users. They can also have this on a per tag basis. The contacts set at the tagholder level (as opposed to the tag level) operate on all tags.

Each of the contacts at the tagholder or tag level can have a different address from the account if required.

Contact Roles	Notes
Main Admin	This is the overall admin contact for the tagholder agreement and so is used for all contractual issues at that level.
Admin	These are other contacts with overall responsibility for the tagholder agreement.
Main Billing	When we implement a unified billing system this is the main contact for that. Until that time they can access the billing bits of each system individually.
Billing	These are other contacts that can use the unified billing system.

Main Technical	This is the overall technical contact for the tagholder. How it is to be used is yet to be defined.
Technical	This are other overall technical contacts for the tagholder.

4.3.2 Sub-service: TAG

NOTE: Within a THA a tagholder can have more than one tag, it is possible that one tagholder may want thousands of tags, one for each reseller. However this is something we do not want to allow. We will therefore limit the number of tags on one THA to ten. We also need to make it clear that the admin contacts on a tag must work for that tag and cannot be a third party company.

NOTE: Each tag can have a different set of contacts associated with it. This is the only way that a tagholder can associate different contacts within that tagholder to different domains. In other words if they want all their domains beginning with A to have billing contact Mr B then they need to create a tag with Mr B as the billing contact and put all of those domains onto that one tag.

Data	Description
Tag*	The TAG. Note, this never changes. If they want to rename it then a new tag is created and all the domains are released to that TAG.
Public Address*	If we implement a WHOIS for tags then this is the address that will be displayed.
Public Tel*	If we implement a WHOIS for tags then this is the telephone that will be displayed.
Public Fax*	If we implement a WHOIS for tags then this is the fax that will be displayed.
Public email*	If we implement a WHOIS for tags then this is the email that will be displayed.
URL*	This is the URL that is displayed on the WHOIS for every domain name on this tag.
Trading As*	This is the trading name that is displayed on the WHOIS for every domain name on this tag.
Public Notes	A short (1000 characters max) description of the business of the tagholder which is displayed on the website and possibly on a WHOIS for tags if we implement one.
Billing Address	Email invoices will be sent to this separate email address. This is a line of text that can contain multiple email addresses separated by commas.
Advanced billing address	This is the address to which advanced warnings of impending renewals are sent.
Tag change notification address	Tag change notifications will be sent to this separate email address. This is a line of text that can contain multiple email addresses separated by commas.
Registrant change notification address	Registrant change notifications will be sent to this separate email address. This is a line of text that can contain multiple email addresses separated by commas.

NOTE: All those data items marked with an asterisk* could be displayed on a WHOIS for tagholders.

4.4 Service: Credit Account

Currently all tagholders get a credit account, but this facility may well need to be extended to other services, for example taking the PRSS service may require a credit account. The information held for a credit account is shown here.

Data	Description
Credit limit	The credit limit that is currently enforced at the tag level will move here. It will not be possible for all systems to be converted immediately to use the single credit limit but that is the intention in future.
VAT Number	The VAT number of the entity that has the credit account. Needed if we ever change the way VAT is charged.
Ledger Number	This is used to assign a block of credit account holders to credit controllers
Old-MA-Number	The old M or A account number, to help customers and credit controllers manage the switch to the new system.
Bank Details	??

4.5 Additional services

For completeness the full list of services is

Registrant PRSS	Tagholder WHOIS2	Member Domain Availability Checker
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And here are some things that we need to consider for inclusion as services

Logo licensee SLD operator	PAB member	CoM member
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5. Automaton changes

5.1 Support for the new data structure

A new set of templates will be developed for use by the Automaton to fit with this new data structure but backward compatibility (section 5.2) will be maintained with the old templates. In addition to the new templates (shown below) the existing template will be amended to accommodate the changes (for example to allow the omission of the technical contact for domains).

Template	Usage
Account modify	This allows the tagholder to change the details of the account that they have access to change, such as the org-type and the address.
Account query	This returns the details for the account.
Contact create	Creates a new contact. The account it is assigned to must be specified and the tagholder must have access to that account.
Contact modify	Modifies an existing contact. If the address of this contact is used elsewhere then it will change it for those other objects as well.
Contact query	Only allowed for a contact on an account that the tagholder has access to. Returns the details of that contact but not where else it is used as that would give the tagholder private information about the account holder.
Contact delete	Deletes a contact.

NOTE: There is no template that allows a tagholder to create an account. The creation of the account is a by-product of registering a domain. There is more discussion about this below in section 6.1 about the registration process.

5.1.1 Replies

The replies will now be different as they will include references to the new objects created. Also anyone using a new account or contact template will receive an appropriate new reply.

5.1.2 Notifications

NOTE: The tagholder will need to tell us in advance whether or not they wish to continue to receive old style or new style notifications or both.

The new style notifications will be about changes to contacts and accounts.

5.2 Backward compatibility rules

To reduce the burden on tagholders the Automaton will continue to work using the old set of templates as well as with a new set of templates.

5.2.1 Creation

If an old template is used to create a domain then a number of new objects (as well as the domain registration) are automatically created:

- The 'for' field, org-type and registrant address details are used to create the account object

- The registrant contact details are used to create the Main Admin Contact for the registrant object.
- The billing contact details are used to create the Main Billing Contact for the registrant object.
- The admin contact details are discarded.
- The technical contact details are discarded.

The reply message is slightly different as it includes the reference for those newly created objects as additional information.

The objects created this way are no different from those created by any other means and can be amended or merged just as easily.

5.2.2 Modification

If an old template is used to modify a domain then what happens depends on the information being changed.

- If the changes apply to what is now account-level information then the account is modified. So for example if the change is in the org-type then as this is now held at the account level it is the account that will be modified.
- If the changes apply to what is now contact-level information then the contact is modified. So for example if the change is in the name of the registrant contact then it is actually the main admin contact that will be modified.

The complicated case is what happens when the objects being modified have been operated on using the new mechanisms. Take the example where the registrant has merged accounts and now has six domains on one account. If a modification arrives through the Automaton that changes the registrant details then the main admin contact on the registrant object is changed, which affects all six domains and so registrant change notifications are generated for the other five domains that are 'side effects' of this change.

5.2.3 Notification

NOTE: The tagholder will need to tell us in advance whether or not they wish to continue to receive old style or new style notifications or both.

If old style notifications have been selected then they continue as before though they include the identification number of the objects that have been changed.

6. Processes

6.1 Registering domains via the Automaton or EPP

When a tagholder registers a domain they can now do it in one of two ways

- Use the old template that specifies all of the details on it or in EPP use a single EPP statement that also includes all of the details on it.
- Do the components of the registration in the following order
 - Register the domain, which creates the account.
 - Add the contacts for this registrant to the newly created account

This ensures that first-come-first-served is not complicated by a more complex registration process.

6.2 Merge accounts

A registrant can merge accounts. To do so they must have the password for both accounts and the 'for' fields must be identical. One account is selected as the master and the other account is merged into it. Wherever there is a data conflict then the data from the master account is used.

A tagholder will also be allowed to merge accounts via automated systems provided that the following conditions are met

- Account names are identical
- They have domains on both accounts
- Both accounts only have a registrant service (in other words neither of the accounts is also a tagholder or a PRSS subscriber or takes any other service).

6.3 Registrant Transfer Process

A transfer is now an account level process and so a single transfer process, that covers all of the dependent services, is now possible. A transfer is now defined as services being moved from one account to another. However there are some considerations introduced by this data structure:

- Some, but not all, of the services could now move from one account to another. The entity that receives must have an account in order to receive the services. This may need to be created as part of the transfer process.
- Until now the only change that triggers a manual transfer is changing the name of the legal registrant ('for' field). However it may now be the cases that certain services require a manual verification of other changes that would previously have been automatic. For example, if a tagholder changes their org-type from sole trader to limited company then this might require manual verification by the tagholder support team.

6.4 'Confirmation of Registration' online system

With the new data structure the current 'confirmation of registration' system will need to change in a number of ways

- Passcodes will be issued on a per-account basis not per-domain.
- The registrant will be able to set/change the details of a number of contacts, not just one.

6.5 Changing the Bill Customer flag

The Bill Customer flag is set on a per domain basis and determines whether the registrant receives the bill directly (BC) or whether the tagholder receives the bill (TH). Two process changes will now operate as regards this field:

- When the flag is changed from BC to TH and the registrant has no other BC domains then the billing contacts are deleted and the registrant is informed of this change.
- When the flag is changed from TH to BC and the registrant has no other BC domains then at least one billing contact must be supplied.

6.6 Side effects of a joined up system

6.6.1 Online user wants to change their address details

Take the example where the technical contact on a tag wishes to change their address but the address pointed to is also being pointed to by the billing and admin contacts as their addresses. In that case the technical contact will not be allowed to change their address as this would give them access they are not entitled to, which is to change the details of other contacts.

If however they did it using EPP or the Automaton then this would be fine since there is no granular security model for those applications.

6.6.2 One registrant has domains with two or more tagholders

It is perfectly possible for a registrant to end up with domains managed by two or more tagholders on their account. This would normally happen by the registrant merging the accounts. In this case both of the tagholders could amend the account and contact details as if they were the sole tagholder for that registrant. The tagholder who has not made the changes would receive a notification just as if the registrant had made the change on the current system.

6.7 Lock states

A tagholder cannot by default register a domain for an existing account unless it already has a domain on that account. This is to prevent any form of account interference between tagholders without the explicit consent of the registrant.

However there are some questions that arise from this

- How do we allow a tagholder to register a domain for an existing account that they do not have a pre-existing relationship with if that is what the registrant wants?
- Should we have a mechanism whereby the registrant can choose what tagholders can amend the registrant and account details? If we did have then we could allow registration without a pre-existing relationship but the new tagholder would automatically be locked out of changes until the registrant chose to let them in.

Both of these questions are to be left as part of the PAB discussions on lock states.

6.8 Determining whois opt-out

One of the problems with our transferring to a new data structure is that we currently determine whois opt-out by what the registrant type is. However there are perfectly plausible scenarios (see 2.5.6) where this will lead to some domains being misclassified.

Currently the only solution is for the end user to have two accounts, with each as different registrant type.

7. Consultation

Consultation on this proposal will be managed by the Executive and aim to reach as many tagholders as possible in the process. This will start with an initial consultation with the PAB to provide the first formal publication of this document.

The next step will be the establishment of a mailing list to consult in details about the proposal. This mailing list will work as follows

- Created as an executive working group, not a PAB policy working group.
- Set to last for a fixed period until the end of February.
- Moderated/Chaired by the Director of IT
- Work items set and progressed by the chair.
- Participation by Nominet staff.

The outcome will then be implemented without further reference to the CoM or PAB, unless specific issues arise which make this necessary. A full communications plan will be put in place, given the extensive nature of the changes being proposed..

The initial work items are likely to be:

7.1.1 Details

This paper has a very high level of detail and whilst it has been considered internally in some depth, external review may throw up some changes.

7.1.2 Proposed methods of interaction

Part of the data restructuring is actually looking at how end users will interact with the new data structure when implemented. There may be cases where changing the structure allows for simplification of user interface and so may need to be incorporated. Where these have been identified in the paper they are discussed but more may become apparent.

7.1.3 Pre-implementation tidy up

There will be a period before the data is restructured when tagholders will be encouraged to tidy up their data on the register with the express intention of reducing the amount of poor quality data that is carried over. This will be done by asking tagholders to do the following:

- Fill in the registrant details where they do not exist on the current template. We may send the tagholders a special notification of all of their names that do not have the registrant details filled in.
- Use the new (but not yet implemented) a-from, b-from and t-from fields that allow a tagholder to specify if specific contacts should be taken from the tagholder record or are specific contacts for the registrant.
- Possibly we will implement an early deletion of the technical contact field for domains as this does not appear in the new data structure. This will allow the simplification of the other pre-implementation work.

7.1.4 Data migration

There are some issues with data migration that have not yet been decided upon. For example if the domain has both a registrant contact and an admin contact in the current data structure then should both of them become contacts in the new data structure or just the registrant contact?

A full plan for the data migration will be drawn up and documented and shared through the consultation mechanism detailed above.

8. Communications

Whilst every effort has been made to reduce the immediate impact on tagholders by allowing for backward compatibility there will undoubtedly be significant impact in the medium term. The introduction of this change will require a major communications push through multiple channels in order to ensure that as many tagholders as possible are fully prepared for the changes.