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333349101113141515171920202122



# Infoblox DNS API plugin

This functionality is dependent on the Infoblox license key.

Based on the original NetYCE - Infoblox integration module, a new API plugin module has been developed. The new module XML payload differs only in details, bit offers greatly more control over the Infoblox objects being created.

Identified by the new set of requirements and the original hard-coded validations, an extensive set of customizable policies have been defined to control the process further.

The assignment of Infoblox Extensible-attibutes is fully supported.

## Integration configuration

The Infoblox integration is setup using the configuration file “**YCE Infoblox integration**” available through the “Admin - System - Edit configs” tool and uses the file `/opt/yce/etc/<hostname>_dhcp.conf`.

This configuration file defines:

- GridMaster ip-address
- userid of the Infoblox functional user
- password of the functional user
- the default view name
- the default custom DHCP option space name
- the Vip-addresses of the GridMembers for HK's and BK's

## Transaction types

This module supports the following request types:

Request	Purpose
Add_host	Create a DNS Host-record or A-record using a fixed ip-address, or finds a free address given a set of IPAM subnets. Optionally creates Host-aliases or Cnames. Ip-address migration is supported using add_host
Clear_host	Remove a Host-record or A-record from the DNS. For Host records, a specific ip-address can be removed too. Optionally removes any Cnames where the fqdn is used a the canonical
Clear_ip	Removes Host-records, A-records or Cnames from the DNS using or is a canonical to a given ip-address.
Set_host	Update attributes of an existing Host, A-record or Cname. Supported attributes are 'comment', 'disable', 'ttl' and 'extensible_attributes'
Add_alias	Create one or more Host-aliases or Cnames for an existing Host-record or A-record
Clear_alias	Remove one or more Host-aliases from a Host-record or Cnames using the canonical fqdn
Show_host	Returns the current settings and attributes of an existing Host-record, A-record or Cname

Request	Purpose
Show_subnet	Returns the current set of settings and attributes of an IPAM subnet, including a list of its addresses and their DNS or DHCP allocation
Subnet_report	Returns a full IPAM export of all subnets and their attributes
Host_report	Returns a full DNS report, cross-referenced with IPAM subnets and ip-addresses for Host-records, A-records and Cnames
Dns_report	Is an alternate name to the 'host_report' request
Subnet_report	Returns a full IPAM export of all subnets and their attributes
Extattr_report	Returns all Extensible Attributes with their definitions as defined on the Gridmaster
Add_static_dhcp	Adds a new static dhcp
Clear_static_dhcp	Clears a static dhcp

## Add\_host

Add Host or A-record with optional aliases (as Cnames) using predetermined or hunted ip-address

There are several variations of this request. The basic request specifies a new DNS hostname and zone (domain), the record type and a pre-determined address.

```
<task response="">
  <head
    passwd="xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx"
    task_name="infoblox_dns"
    task_type="xml-request"
    userid="loginid"
  />
  <request action_type="add_host">
    <host
      host_domain="some.domain.name"
      host_name="new-hostname"
      record_type="host"
      comment="RFC C000123001"
    >
      <ipv4_addr>10.33.44.10/25</ipv4_addr>
    </host>
  </request>
</task>
```

An extensive version adds some returned logging, a series of extensible-attributes to be defined for this record, and two aliases to be created too. The type of aliases (host or cname) depends on policy settings.

```
<task response="">
  <head
    passwd="xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx"
    task_name="infoblox_dns"
    task_type="xml-request"
    userid="loginid"
```

```

        log_level="1"
    />
    <request action_type="add_host">
        <host
            host_domain="some.domain.name"
            host_name="new-hostname"
            record_type="host"
            comment="RFC C000123002"
        >
            <ext_attr rfc="T000123" />
            <ext_attr srv="DSN002078" />
            <ext_attr site="ASD-NY01" />
            <ext_attr ReferenceCode="ASD-DC" />
            <ext_attr building="across the street" />
            <ext_attr NetworkEnv="Ota" />
            <ipv4_addr>10.33.43.10/25</ipv4_addr>
            <alias>new-hostname-ref.some.domain.name</alias>
            <alias>alternate-name.another.domain.name</alias>
        </host>
    </request>
</task>

```

And as another example, a basic A-record is created where the ip-address will be allocated from the first free address in a set of subnets.

```

<task response="">
    <head
        passwd="xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx"
        task_name="infoblox_dns"
        task_type="xml-request"
        userid="loginid"
    />
    <request action_type="add_host">
        <host
            host_domain="some.domain.name"
            host_name="new-hostname"
            record_type="arec"
            comment="RFC T000123003"
        >
            <subnet_addr>10.66.77.0/25</subnet_addr>
            <subnet_addr>10.66.77.0/28</subnet_addr>
        </host>
    </request>
</task>

```

## IP-migration

The Add\_host call can be used to migrate the ip-address of an existing Host-record or A-record by setting the optional attribute **new\_ip\_addr="yes"**. When set to "yes", it will determine the new ip-

address from the `ipv4_addr="."` attribute or from the `subnet_addr="."`, identical to the regular `Add_host` call. Only the validation of the fqdn is reversed: with the `new_ip_addr="yes"` the fqdn **must** exist as the record type specified, when `new_ip_addr="no"` the fqdn **may not** exist.

This example also demonstrates the use of the attributes **disable** and **ttl**.

```
<task response="">
  <head
    passwd="xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx"
    task_name="infoblox_dns"
    task_type="xml-request"
    userid="loginid"
    log_level="1"
  />
  <request action_type="add_host">
    <host
      host_domain="some.domain.name"
      host_name="existing-hostname"
      record_type="host"
      new_ip_addr="yes"
      comment="RFC T000123004"
      disable="no"
      ttl="500"
    >
      <ext_attr
        rfc="T000123004"
      />
      <ipv4_addr>10.66.44.12/25</ipv4_addr>
    </host>
  </request>
</task>
```

## Views

The Infoblox environment uses names to identify IPAM-views and DNS-views. The DNS-views are hierarchically associated with the IPAM-view. The IPAM-view contains the ipv4 and ipv6 subnet definitions that may be used in that view, the DNS-views associated with an IPAM-view contain the DNS domain-names that can be used.

Any Infoblox DNS operation needs to have both views specified and must match their association. For both views defaults are defined in the NetYCE configuration file `etc/<server>_dhcp.conf`, the same file that has the Infoblox GridMaster address and credentials.

When not using the default views, they can be specified using the **ipam\_view** and **dns\_view** attributes.

```
<task>
  <head
    passwd="xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx"
```

```

    task_name="infoblox_dns"
    task_type="xml-request"
    userid="loginid"
    log_level="1"
  />
  <request action_type="add_host">
    <host
      host_domain="acme.com"
      host_name="foo"
      record_type="host"
      ipam_view="Internet"
      dns_view="Exposed"
    >
      <ipv4_addr>80.90.100.200/18</ipv4_addr>
      <ipv6_addr>baba:bebe:3100::200/120</ipv6_addr>
    </host>
  </request>
</task>

```

### Attributes

Attribute name	Object	Values	Description
<b>log_level</b>	head	'0' or '1'	When set to a value greater than 0, a full set of log messages is included in the XML response
<b>host_name</b>	host	host name	The hostname part of the new DNS record fqdn (full qualified domain name). Many policies exist that define the host-name validation.
<b>host_domain</b>	host	zone name	The domain part of the new record fqdn. Many policies exist that define the domain-name validation.
<b>record_type</b>	host	'host' or 'arec'	The record type, 'Host-record' or 'A-record', to be created.
<b>comment</b>	host	string	The text to be assigned to the "comment" of the new record. If the string length allows, a timestamp in brackets will be appended
<b>disable</b>	host	'yes' or 'no'	When set to 'yes' the host record will be disabled, otherwise it will be enabled. Attribute is optional, default is "no"
<b>ttl</b>	host	'0' thru '4294967295' or 'inherit'	Determines the 'time-to-live' in seconds that the entry may be cached. '0' denotes no caching. the value 'inherit' removes the ttl value from the record which will then be inherited
<b>ipv4_addr</b>	host	ipv4-address with prefix	The fixed ipv4-address for the new DNS record including its subnet prefix. The subnet must exist in the IPAM which network-address is calculated from the ip-address and the prefix. When an ipv4_addr attribute is present, any subnet_addr attribute is ignored. Only the first ipv4-addr specified will be used. » CHECK If the address is in use, the request will be rejected

Attribute name	Object	Values	Description
subnet_addr	host	network-address with prefix	The first free ip-address is used for the new DNS record. Multiple subnet_addr attributes may be added to allow for continued searching for a free address should they be exhausted. Policies define if and what addresses should be skipped. A address is considered free when it is not assigned an fqdn or is part of a DHCP scope. These attributes will be ignored when an ipv4_addr attribute is present.
ipv6_addr	host	ipv6-address with prefix	The fixed ipv6-address for the new DNS record including its subnet prefix. The ipv6-subnet must exist in the IPAM-view which network-address is calculated from the ip-address and the prefix. Only the first ipv6_addr specified will be used. The ipv6_address can only be used for 'host' records at this time, AAAA-record support is planned. The IPAM-view of the ipv4 and ipv6 addresses must match.
alias	host	fqdn	The full qualified domain name of the 'Host-alias' or 'Cname-record' to be created. The fqdn may not exist in the DNS. Various policies control the validation of the alias names (hostname and zone).
ext_attr	host	name-value pair	Extensible attributes must be pre-defined in the Infoblox GridMaster. The name must match an existing extensible-attribute (and applicable to the the record-type) or will be ignored. The value will be validated against its definition. When value fails to match a listed value, the request will be rejected. Attribute name and value validations will be case-insensitive (and corrected). When an existing-attribute is marked as required but is missing, the request is rejected.
ipam_view	host	IPAM-view name	specify the Infoblox IPAM-view. The default is configured in 'etc/<server>_dhcp.conf' which is normally 'Default'
dns_view	host	DNS-view name	specify the Infoblox DNS-view. The default is configured in 'etc/<server>_dhcp.conf' which is normally 'Intern'. The DNS-view is hierarchically dependent on the IPAM-view

Extensible attributes may be included in the request using two distinct XML formats. In addition to the example above, this format is available too. Note however, that this last form will cause XML parsing errors if duplicate name attributes are present.

```
<ext_attr
  rfc="C000123001"
  srv="DNS002078"
  site="ASD-NY01"
  ReferenceCode="ASD-DC"
  building="across the street"
  Netwerkomgeving="Ota"
/>
```



## Clear\_host

Remove Host-record or A-record. Optionally remove referring Cnames too.

```
<task response="">
  <head
    passwd="xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx"
    task_name="infoblox_dns"
    task_type="xml-request"
    userid="loginid"
    log_level="1"
  />
  <request action_type="clear_host">
    <host
      host_domain="some.domain.name"
      host_name="some-hostname"
      record_type="host"
      clear_cnames="yes"
      comment="RFC T000123005"
    >
    </host>
  </request>
</task>
```

### Attributes

Attribute name	Object	Values	Description
log_level	head	'0' or '1'	When set to a value greater than 0, a full set of log messages is included in the XML response
host_name	host	host name	The hostname part of the existing DNS record fqdn (full qualified domain name).
host_domain	host	zone name	The domain part of the existing record fqdn.
record_type	host	'host' or 'arec'	The record type, 'Host-record' or 'A-record', to be removed. The record-type must match the existing record. If the record does not exist as the type specified, the request will be rejected.
comment	host	string	Attribute will be ignored
clear_cnames	host	'yes' or 'no'	when set to 'yes', any Cname-records with a canonical name matching the host fqdn will be removed too.
alias	host	fqdn	Attribute will be ignored
ext_attr	host	name-value pair	Extensible attributes will be ignored

## Clear\_ip

Removes Host-records, A-record or Cnames using or pointing to a given ip-address.

```
<task response="">
  <head
    passwd="xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx"
```

```
task_name="infoblox_dns"
task_type="xml-request"
userid="loginid"
log_level="1"

/>
<request action_type="clear_ip">
  <host
    ipv4addr="172.17.0.21"
    view="Intern"
  >
</host>
</request>
</task>
```

Attributes

Attribute name	Object	Values	Description
log_level	head	'0' or '1'	When set to a value greater than 0, a full set of log messages is included in the XML response
ipv4addr	host_address	ip-address	The IPv4 address to remove from DNS Host, A-rec and Cname records. The ip-address should not include the prefix.
view	DNS view name	Intern	Optional attribute that specifies the DNS view where the ip-address will be searched in. Defaults to 'Intern'
network_view	IPAM view name	Default	Optional attribute that specifies the IPAM view where the ip-address will be searched in. Defaults to 'Default'

Set\_host

Update attributes of a Host-record, A-record, or Cname.

The available DNS record attributes are: 'comment', 'disable', 'ttl', and 'extensible\_attributes'.

```
<task response="">
  <head
    passwd="xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx"
    task_name="infoblox_dns"
    task_type="xml-request"
    userid="loginid"
    log_level="1"
  />
  <request action_type="set_host">
    <host
      host_domain="some.domain.name"
      host_name="existing_hostname"
      record_type="host"
      comment="RFC T000123006"
      disable="no"
      ttl="1000"
    >
  </host>
</request>
</task>
```

```
>
<ext_attr
  rfc="T000123006"
  site="ASD-NY01"
  ReferenceCode="1006"
  NetworkEnv="0ta"
/>
</host>
</request>
</task>
```

Attributes

Attribute name	Object	Values	Description
log_level	head	'0' or '1'	When set to a value greater than 0, a full set of log messages is included in the XML response
host_name	host	host name	The hostname part of the existing DNS record fqdn (full qualified domain name).
host_domain	host	zone name	The domain part of the existing record fqdn.
record_type	host	'host' or 'arec' or 'cname'	The record type to update. The record-type must match the existing record. If the record does not exist as the type specified, the request will be rejected.
comment	host	string	The text to be assigned to the “comment” of the new record. If the string length allows, a timestamp in brackets will be appended
disable	host	'yes' or 'no'	When set to 'yes' the host record will be disabled, otherwise it will be enabled. Attribute is optional, default is “no”
ttl	host	'0' thru '4294967295' or 'inherit'	Determines the 'time-to-live' in seconds that the entry my be cached. '0' denotes no caching. the value 'inherit' removes the ttl value from the record which will then be inherited
ext_attr	host	name-value pair	Extensible attributes must be pre-defined in the Infoblox GridMaster. The name must match an existing extensible-attribute (and applicable to the the record-type) or will be ignored. The value will be validated against its definition. When value fails to match a listed value, the request will be rejected. Attribute name and value validations will be case-insensitive (and corrected). When an existing-attribute is marked as required but is missing, the request is rejected. The extensible attributes specified in the request will be merged with those of the existing record where the specified values will overwrite the existing.

Add\_alias

Create multiple Cnames or Host-aliases for an existing canonical (an existing A-record or Host-record)

```
<task response="">
  <head
```

```
passwd="xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx"
task_name="infoblox_dns"
task_type="xml-request"
userid="loginid"
log_level="1"

/>
<request action_type="add_alias">
  <host
    host_domain="some.domain.name"
    host_name="some-hostname"
    record_type="cname"
    comment="RFC T000123007"
  >
    <ext_attr
      rfc="T000123007"
      srv="DSN002078"
      site="ASD-NY01"
      ReferenceCode="ASD-DC"
      building="across the street"
      Netwerkomgeving="0ta"
    />
    <alias>some-hostname-ref.some.domain.name</alias>
    <alias>alternate-name.another.domain.name</alias>
  </host>
</request>
</task>
```

Attributes

Attribute name	Object	Values	Description
log_level	head	'0' or '1'	When set to a value greater than 0, a full set of log messages is included in the XML response
host_name	host	host name	The hostname part of the existing DNS record fqdn (full qualified domain name).
host_domain	host	zone name	The domain part of the existing record fqdn.
record_type	host	'cname' or 'host'	The alias type to be created, a Cname or Host-alias. The specified host fqdn must exist as either a Host-record or an A-record or the request will be rejected. When specifying 'host'-type alias on a Host-record type host, the policy default_alias_type must be alias to create a Host-alias, in ALL other cases a Cname-record is created
comment	host	string	The text to be assigned to the "comment" of the new record. If the string length allows, a timestamp in brackets will be appended
disable	host	'yes' or 'no'	When set to 'yes' the host record will be disabled, otherwise it will be enabled. Attribute is optional, default is "no"

Attribute name	Object	Values	Description
ttl	host	'0' thru '4294967295' or 'inherit'	Determines the 'time-to-live' in seconds that the entry my be cached. '0' denotes no caching. the value 'inherit' removes the ttl value from the record which will then be inherited
alias	host	fqdn	The full qualified domain name of the 'Host-alias' or 'Cname-record' to be created. The fqdn may not exist in the DNS or will be skipped. There is no (practical) limit to the number of alias attributes in the request. An alias (Host or Cname) will be created for each alias attribute. Various policies control the validation of the alias names (hostname and zone).
ext_attr	host	name-value pair	Extensible attributes must be pre-defined in the Infoblox GridMaster. The name must match an existing extensible-attribute (and applicable to the the record-type) or will be ignored. The value will be validated against its definition. When value fails to match a listed value, the request will be rejected. Attribute name and value validations will be case-insensitive (and corrected). When an existing-attribute is marked as required but is missing, the request is rejected.

### Clear\_alias

Remove Cnames or Host-aliases from an existing canonical reference record.

```
<task response="">
  <head
    passwd="xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx"
    task_name="infoblox_dns"
    task_type="xml-request"
    userid="loginid"
    log_level="1"
  />
  <request action_type="clear_alias">
    <host
      host_domain="some.domain.name"
      host_name="some-hostname"
      record_type="cname"
      dns_view="Internal"
    >
      <alias>some-hostname-ref.some.domain.name</alias>
      <alias>alternate-name.another.domain.name</alias>
    </host>
  </request>
</task>
```

The <record\_type> value controls if a “host”-alias or “cname” is to be removed. Default is “cname”.

Multiple C-names/host-aliases can be removed for the canonical name by including multiple <alias> definitions

Attempting to remove an "host"-alias from an A-record as canonical is impossible. The request will be rejected.

For 'host'-records the host details (host\_fqdn or host\_name and host\_domain) are mandatory, for 'cname'-records the host details are optional. For a 'host'-record this is a hard dependency.

When clearing a cname record and the host-fqdn is present in the request, the canonical must exist and match the cname. Attempting to remove a host-alias or a cname that is not referring to the canonical (host) will have no effect.

Including <comment> or <ext\_attr> tags are hardly worth the trouble: the record to attach them to will be deleted. However, for process tracking, its use could be desirable

Attribute name	Object	Values	Description
log_level	head	'0' or '1'	When set to a value greater than 0, a full set of log messages is included in the XML response
host_name	host	host name	The hostname part of the existing DNS record fqdn (full qualified domain name).
host_domain	host	zone name	The domain part of the existing record fqdn.
host_fqdn	host	host+zone name	The fqdn of the existing record.
dns_view	host	DNS view name	The infoblox DNS view name. Default is defined in etc/<server>_dhcp.conf.
record_type	host	'cname' or 'host'	The alias type to be removed: a Cname or Host-alias. The specified host fqdn must exist as either a Host-record or an A-record or the request will be rejected.
alias	host	fqdn	The full qualified domain name of the 'Host-alias' or 'Cname-record' to be removed. The alias fqdn must be the canonical of a Host-record or A-record. If host details are present and the alias lacks a domain, the host domain will be used. There is no (practical) limit to the number of alias attributes in the request.

### Show\_host

Returns the various attributes for the record requested. The record\_type must match the fqdn of the specified host name and zone.

The response includes a list of Cnames (if any) that have a canonical matching the requested record. In case of a Cname record, these are indirect references.

```
<task response="">
  <head
    passwd="xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx"
    task_name="infoblox_dns"
    task_type="xml-request"
    userid="loginid"
    log_level="1"
  />
  <request action_type="show_host">
```

```
<host
  host_domain="some.domain.name"
  host_name="some-hostname"
  record_type="host"
>
</host>
</request>
</task>
```

Attribute name	Object	Values	Description
host_name	host	host name	The hostname part of the existing DNS record fqdn (full qualified domain name).
host_domain	host	zone name	The domain part of the existing record fqdn.
record_type	host	'host', 'arec' or 'cname'	The record_type of the requested fqdn

Show\_subnet

Reports on attributes of an IPAM subnet and its addresses. For each ip-address the name (associated fqdn) and its use (dns or dhcp) is given. Infoblox cannot report these details for more than 2000 ip-addresses.

The Subnet must exist in the IPAM with the matching prefix or the request will be rejected.

```
<task response="">
  <head
    passwd="xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx"
    task_name="infoblox_dns"
    task_type="xml-request"
    userid="loginid"
    log_level="1"
  />
  <request action_type="show_subnet">
    <subnet
      net_address="10.33.44.0"
      net_prefix="25"
    >
    </subnet>
  </request>
</task>
```

Subnet\_report

The Infoblox subnet report delivers an XML report on all active subnets defined in the Infoblox IPAM.

```
<task response="">
  <head
    passwd="xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx"
    task_name="infoblox_dns"
```

```
task_type="xml-request"
userid="loginid"
/>
<request
  action_type="subnet_report"
  network_view="Default"
/>
</task>
```

The report uses information retrieved by a separate process that continuously extracts IPAM, Zone and DNS data from the Infoblox GridMaster at a gentle pace. This setup allows for instant reporting at moderately aged data (a few hours).

The subnets records reported include any Infoblox 'Extensible Attributes' that are defined for that subnet.

Sample response (a very small section):

```
<task>
  <head
    error="0000"
    passwd="xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx"
    status="completed"
    task_name="infoblox_dns"
    task_type="xml-request"
    userid="xml"
  />
  <request
    action_type="subnet_report"
    auth_agent="yce"
    request_id="101"
    task_module="xch_ib_dns.pl"
    task_sub="ib_dns"
    user_level="2"
  />
  <response
    gridmaster="172.17.0.34"
  >
    <subnet
      name="167772160"
      comment="OTA Omgeving Beheer Vl199"
      disable="false"
      net_end="167772415"
      net_range="10.0.0.255"
      net_start="167772160"
      netmask="255.255.255.0"
      network="10.0.0.0"
      network_container="10.0.0.0/23"
      network_view="Default"
      prefix="24"
```



```

    subnet="10.0.0.0/24"
  >
    <ext_attr name="Subnetstatus" value="In gebruik" />
    <ext_attr name="Netwerkomgeving" value="OTA" />
  </subnet>
  <subnet
    name="167772416"
    comment="OTA Omgeving PtP Best"
    disable="false"
    net_end="167772419"
    net_range="10.0.1.3"
    net_start="167772416"
    netmask="255.255.255.252"
    network="10.0.1.0"
    network_container="10.0.1.0/24"
    network_view="Default"
    prefix="30"
    subnet="10.0.1.0/30"
  />
  :::
  <subnet
    name="4022566912"
    comment="NetYCE - PIM SSM"
    disable="false"
    net_end="4022599679"
    net_range="239.195.255.255"
    net_start="4022566912"
    netmask="255.255.128.0"
    network="239.195.128.0"
    network_container="239.0.0.0/8"
    network_view="Default"
    prefix="17"
    subnet="239.195.128.0/17"
  >
    <options name="domain-name" num="15" val="netyce.net" />
    <options name="nameservers" num="6" val="80.90.100.200,80.90.101.200"
  />
  </subnet>
  <timestamps
    current="2022-01-13 13:58:08"
    hosts="2022-01-30 13:35:45"
    subnets="2022-01-30 13:35:45"
    zones="2022-01-30 13:35:45"
  />
</response>
</task>

```

## Host\_report

The Infoblox host report delivers an XML report on all DNS registrations of all zones. Separate records

are created for Hosts, Aliases, A-records and C-names. For each of these records the ip-address is resolved to its corresponding ip-address and IPAM subnet (when available).

```
<task response="">
  <head
    passwd="xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx"
    task_name="infoblox_dns"
    task_type="xml-request"
    userid="loginid"
  />
  <request
    action_type="host_report"
    network_view="Default"
  />
</task>
```

The report uses information retrieved by a separate process that continuously extracts IPAM, zone and DNS data from the Infoblox GridMaster at a gentle pace. This setup allows for instant reporting at moderately aged data (a few hours).

The host records reported include any Infoblox 'Extensible Attributes' that are defined for that record.

Sample report (section):

```
<task>
  <head
    error="0000"
    passwd="xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx"
    req_app="./subnet_report.pl"
    req_host="specter"
    status="completed"
    task_name="infoblox_dns"
    task_type="xml-request" userid="myuserid"
  />
  <request
    action_type="host_report"
    auth_agent="yce"
    request_id="101"
    task_module="xch_ib_dns.pl"
    task_sub="ib_dns"
    user_level="2"
  />
  <response gridmaster="172.17.0.34">
    <host
      name="camtech.a3478.netyce.net"
      comment="T00243218"
      ipv4addr="10.44.55.52"
      subnet="10.44.55.48/28"
      type="Host_record"
      zone="blox.netyce.net"
```

```

>
  <ext_attr name="OUD-RFC" value="243218" />
  <ext_attr name="RFC" value="T000243218" />
</host>
<host
  name="camtech-nijkerk.blox.netyce.net"
  comment="T000378225 "
  ipv4addr="10.44.55.148"
  subnet="10.44.55.0/22"
  type="Host_record"
  zone="blox.netyce.net"
/>
:::
<host
  name="ntts04.a9026.netyce.net"
  comment=""
  ipv4addr="10.214.132.58"
  subnet="10.214.132.0/22"
  type="Host_alias"
  zone="a9026.netyce.net"
/>
<timestamps
  current="2020-09-13 14:01:02"
  hosts="2020-08-30 13:35:45"
  subnets="2020-08-30 13:35:45"
  zones="2020-08-30 13:35:45"
/>
</response>
</task>

```

## ExtAttr\_report

Note: This report is not yet available for production (oct 2015)

Report all Extensible Attributes and their definitions as defined in the GridMaster.

The report is primarily intended to retrieve the list of value items that the Attribute will allow and integrate it in a custom-built user-interface where an appropriate value can be selected.

```

<task response="">
  <head
    passwd="xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx"
    task_name="infoblox_dns"
    task_type="xml-request"
    userid="loginid"
  />
  <request
    action_type="extattr_report"
  />

```

</task>

## Add\_static\_dhcp

Adds a new static dhcp address

```
<task response="">
  <head
    passwd="xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx"
    task_name="infoblox_dns"
    task_type="xml-request"
    userid="loginid"
    log_level="1"
  />
  <request
    action_type="add_static_dhcp"
    ipv4addr="172.17.0.21"
    mac="00:00:5e:00:53:00"
  />
</request>
</task>
```

### Attributes

Attribute name	Values	Mandatory	Description
ipv4addr	ip-address	no	The IPv4 address of the static dhcp address to add
mac	mac-address	no	the MAC address value of the DHCP Fixed Address

## Clear\_static\_dhcp

Clears a static dhcp address

```
<task response="">
  <head
    passwd="xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx"
    task_name="infoblox_dns"
    task_type="xml-request"
    userid="loginid"
    log_level="1"
  />
  <request
    action_type="clear_static_dhcp"
    ipv4addr="172.98.0.23"
    mac="00:00:5e:00:53:00"
  />
</request>
```

</task>

Attributes

Attribute name	Values	Mandatory	Description
log_level	'0' or '1'	yes	When set to a value greater than 0, a full set of log messages is included in the XML response
mac	mac-address	no	the MAC address value of the DHCP Fixed Address
network_view	'Default'	no	Attribute that specifies the IPAM view where the ip-address will be searched in. Defaults to 'Default'

Policies

The module has a section that defines the many policies that can be customized to alter the validation and behaviour of the module.

```
default_host_type => 'host',      # use 'host' or 'arec' as default
default_alias_type => 'cname',    # use 'cname' or 'alias' as default
default_clear_cnames => 'yes',    # use 'yes' or 'no' as default (when
deleting Host/Arecords)
unique_addresses => '1',          # 1=reject multiple addresses per host,
0=allow TODO (not needed?)
unique_fqdn => '1',               # 1=reject multiple records per fqdn,
0=allow
reject_host_alias => '1',         # 1=reject any host-alias >>>TODO
fqdn_max_length => '255',         # reject when exceeds
comment_max_length => '255',     # reject when comment too long
hostname_min_length => '2',      # reject when shorter
hostname_underscore => '0',      # replace _ for - when 1
hostname_dotted_hosts => '0',    # 0=reject, 1=allow
hostname_special_chars => '1',   # 1=reject, 0=replace special chars
hostname_start_letter => '1',    # 1=reject unless starting letter,
0=allow
hostname_trailing_dash => '0',   # 1=reject, 0=allow
domain_min_length => '2',        # reject when any segment in domain is
shorter
domain_underscore => '0',        # replace _ for - when 1
domain_special_chars => '1',     # 1=reject, 0=replace special chars
domain_start_letter => '1',      # 1=reject unless starting letter,
0=allow
domain_dotted => '1',            # minimum nr of dots in domain
domain_trailing_dash => '1',     # 1=allow, 0=reject
domain_must_exist => '1',        # 1=reject unless exists, 0=allow
subnet_must_exist => '1',        # 1=reject unless in IPAM, 0=allow
free_addr_skip => {
    26 => 10,                    # /26 skips first 10 addr
    27 => 5,                    # /27 skips first 5 addr
    28 => 5,                    # you got it
    29 => 1,
    30 => 1,
```

```
    31 => 0,  
  },  
  free_addr_skip_default => '10', # all other prefixes skip 10  
  free_addr_skip_last => '1',    # 1=skip the last '1' addresses, 0=use  
it  
  fixed_addr_free => '1',        # 1=reject addr in use, 0=use it
```

## Error Codes

The following error codes and messages can be returned by this module in the response attributes **ib\_status** and **ib\_status\_msg**:

Function	Error-code	Message format
add_host	0000	Succesful completed 'host_name'
add_host	0104	Signin to Infoblox failed
add_host	0201	Invalid record type 'record_type'
add_host	0202	Invalid hostname 'host_name'
add_host	0203	Invalid domain name 'host_domain'
add_host	0204	domain 'host_domain' does not exist
add_host	0205	Invalid fqdn 'fqdn'
add_host	0206	fqdn 'fqdn' exists
add_host	0207	Invalid ipv4 address 'net/prefix'
add_host	0208	subnet of ipv4 address 'net/prefix' does not exist
add_host	0209	ipv4 address 'ipv4_address' is not free
add_host	0210	Invalid subnet 'net/prefix'
add_host	0211	Missing address or subnet(s) 'fqdn'
add_host	0212	No free adres found in the subnet(s) 'fqdn'
add_host	0213	Validation of ext-attr for Arec failed
add_host	0214	Validation of ext-attr for Host failed
add_host	0215	Missing alias domain in fqdn 'alias'
add_host	0216	Invalid alias hostname 'alias'
add_host	0217	Invalid alias domain 'alias'
add_host	0218	alias domain does not exist 'alias'
add_host	0219	Invalid alias fqdn 'alias'
add_host	0220	Validation of ext-attr for Cname failed
add_host	0221	Cname could not be created: 'fail reason'
add_host	0222	No A-record found for ip-migration 'fqdn'
add_host	0223	Validation of ext-attr for Host failed
add_host	0224	Updating Arec 'fqdn' ip-address failed
add_host	0225	No Host-record found for ip-migration 'fqdn'
add_host	0226	Host-record has too many addresses for ip-migration 'fqdn'
add_host	0227	Validation of ext-attr for Host failed
add_host	0228	Updating Host 'fqdn' ip-address failed
clear_host	0000	Succesful completed 'host_name'
clear_host	0104	Signin to Infoblox failed

Function	Error-code	Message format
clear_host	0301	Invalid record type 'record_type'
clear_host	0302	Invalid fqdn 'fqdn'
clear_host	0303	Invalid host ip-address 'address'
set_host	0000	Succesful completed 'host_name'
set_host	0104	Signin to Infoblox failed
set_host	0351	Invalid record type 'record_type'
set_host	0352	Invalid fqdn 'fqdn'
set_host	0353	No 'record_type' found for fqdn 'fqdn'
set_host	0354	Validation of ext-attr for Host failed
set_host	0355	Validation of ext-attr for Arec failed
set_host	0356	Validation of ext-attr for Cname failed
set_host	0357	Updating 'record_type' 'fqdn' failed
add_alias	0000	Succesful completed 'host_name'
add_alias	0104	Signin to Infoblox failed
add_alias	0401	Invalid record type 'record_type'
add_alias	0402	Invalid hostname 'host_name'
add_alias	0403	Invalid domain name 'host_domain'
add_alias	0404	domain 'host_domain' does not exist
add_alias	0405	Invalid fqdn 'fqdn'
add_alias	0406	fqdn 'fqdn' does not exist
add_alias	0407	no alias to add to canonical 'fqdn'
add_alias	0408	Missing alias domain in fqdn 'alias'
add_alias	0409	Invalid alias hostname 'alias'
add_alias	0410	Invalid alias domain 'alias'
add_alias	0411	alias domain does not exist 'alias'
add_alias	0412	Invalid alias fqdn 'alias'
add_alias	0413	Validation of ext-attr for Cname failed
add_alias	0414	Cname could not be created: 'fail reason'
clear_alias	0000	Succesful completed 'host_name'
clear_alias	0104	Signin to Infoblox failed
clear_alias	0501	Invalid record type 'record_type'
clear_alias	0502	Invalid fqdn 'host_fqdn'
clear_alias	0503	no alias to clear
clear_alias	0504	No Cnames found for 'host_fqdn'
clear_alias	0505	no Cnames removed
show_host	0000	Succesful completed 'host_name'
show_host	0104	Signin to Infoblox failed
show_host	0601	Invalid record type 'record_type'
show_host	0602	Invalid fqdn 'host_fqdn'
show_host	0603	No Host-record found for 'host_fqdn'
show_host	0604	No A-record found for 'host_fqdn'
show_host	0605	No Cname-record found for 'host_fqdn'
show_subnet	0000	Succesful completed 'subnet_addr'
show_subnet	0104	Signin to Infoblox failed

Function	Error-code	Message format
show_subnet	0701	Invalid ipv4 subnet address 'subnet_addr'
show_subnet	0702	subnet 'subnet_addr' does not exist
make_host	0801	Create Host for 'fqdn' with address 'ip_address' failed
make_host	0802	Adding Host for 'fqdn' with address 'ip_addr' failed
make_arec	0811	Create Arecord for 'fqdn' at 'ip_address' failed
make_arec	0812	Add Arecord for 'fqdn' at 'ip_address' failed
make_cname	0821	Create Cname 'fqdn' on canonical 'canonical_fqdn' failed
make_cname	0822	Adding Cname 'fqdn' on canonical 'canonical_fqdn' failed
make_host_alias	0831	No Host-record found for 'fqdn'
make_host_alias	0832	Validation of ext-attr for Host failed
make_host_alias	0833	Updating Host 'fqdn' aliases failed
del_host	0841	Removing complete Host for 'fqdn' at 'ip_address' failed
del_host	0842	Updating Host 'fqdn' addresses failed
del_host	0843	Removing Host for 'fqdn' at 'ip_address' failed
del_host	0844	No Host for 'fqdn' matched 'ip_address'
del_host	0845	No Host found for 'fqdn'
del_arec	0901	Remove Arecord for 'fqdn' at 'ip_address' failed
del_arec	0902	Remove Arecord for 'fqdn' at 'ip_address' failed
del_arec	0903	No Arecords for 'fqdn' matched 'ip_address'
del_arec	0904	No Arecord found for 'fqdn'
del_cname	0911	No Cname found for 'fqdn'
del_cname	0912	Remove Cname for 'fqdn' failed
del_host_alias	0921	No Host found for 'fqdn'
del_host_alias	0922	Updating Host 'fqdn' aliases failed

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