ORACLE NETSUITE

Cloud Infrastructure Guide

2022.2

March 15, 2023

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To report software issues, contact NetSuite Customer Support.

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NetSuite Accounts in a Cloud Environment

NetSuite accounts are hosted in various data centers around the globe. To take full advantage of our cloud infrastructure, you must keep your NetSuite account free from data center-specific references. You must not use data center-specific URLs or IP addresses for accessing NetSuite. Use your account-specific domains and dynamic discovery methods.

See the following topics for more information:

- NetSuite IP Addresses provides more secure alternatives for accessing NetSuite than using IP address rules.
- Supported TLS Protocol and Cipher Suites lists the supported versions of TLS and cipher suites for accessing various NetSuite services.
- Secure HTTPS Outbound Communication and SSL Certificates helps you determine which Certificate Authorities to purchase SSL certificates from. This topic also documents that you must provide a complete certificate chain, including all intermediate certificates in addition to the root and leaf certificates.
- VPN Configuration for User Access to NetSuite describes supported configurations of VPNs for NetSuite access.
- Traffic Health helps you locate instances of data center-specific URLs in your account.

In addition to those sections, review the following sections to understand the best practices for accessing NetSuite in a cloud environment.

- NetSuite Accounts Are Hosted in the Cloud
- Best Practices for NetSuite Access by Feature
- Understanding NetSuite URLs
- Dynamic Discovery of URLs for SOAP Web Services and RESTlet Clients
- URLs for Account-Specific Domains
- How to Transition from Data Center-Specific Domains
- The REST Roles Service

NetSuite IP Addresses

Oracle NetSuite does not support the use of NetSuite IP addresses to access or manage access to any NetSuite services. There are better alternatives than using a list of allowed IP addresses to manage access to NetSuite. Using IP addresses (either as part of a URL or in your Domain Name Server, or DNS) to access NetSuite services prevents dynamic DNS routing.

Ensure that you understand the following:

- **The IP addresses of NetSuite services may change at any time without notice.**
- NetSuite Customer Support will not provide a list of NetSuite IP addresses.
- NetSuite Customer Support will not be able to assist you when your integration breaks due to a change in NetSuite IP addresses.
- Using IP addresses to directly access NetSuite services can result in unpredictable service outages or significant performance degradation.

Managing Access to NetSuite Services

You should not rely on methods that require explicit reference to any NetSuite IP address. Modifying the results of DNS translation prevents optimal resource allocation. This practice can cause unpredictable service outages or performance degradation.

See the following sections for more information:

- Managing Inbound Access
- Managing Outbound Access

Managing Inbound Access

You should not modify routing to NetSuite services by using IP addresses manually resolved from DNS.

For more information about alternatives to managing inbound access in NetSuite, see the following topics:

- **User access to NetSuite:** See the help topic Two-Factor Authentication (2FA).
- **SOAP web services:** See the help topic Integration Record Overview. See also Token-based Authentication (TBA).
- **RESTlets:** See the help topics Token-based Authentication (TBA) and OAuth 2.0.
- **REST web services:** See the help topic Authentication and Session Management for REST Web Services.
- **Client application access to NetSuite:** See the help topic Token-based Authentication (TBA).
- **Access to NetSuite through SuiteAnalytics Connect (ODBC):** See the help topic Authentication Using Server Certificates for ODBC.
- **Websites and web stores:** See the help topic Point your Domain Name at your Domain (DNS Settings).

Managing Outbound Access

NetSuite Customer Support will not provide you with a list of services or IP addresses for outbound communication from NetSuite.

For more information about alternatives to managing outbound access in NetSuite, see the following topics:

Note: IP addresses for outbound communication from NetSuite are not documented in the NetSuite Help Center or in SuiteAnswers.

If you choose to use IP addresses to access or manage access to NetSuite services in firewall or proxy configuration, it is your responsibility to monitor for changes and update these settings when NetSuite IP address ranges change. If you decide to deploy a firewall, ensure that you have the resources to make it work in cloud environment.

- **Outbound HTTPS calls from NetSuite using SuiteScript 2.0:** Improve the security of integrations and customizations that use the N/https Module for outbound HTTPS calls from NetSuite to a third-party server. Your integrations and customizations should use client certificates for outbound HTTPS calls. Client certificates ensure authenticity of the traffic source. See the help topic N/https/clientCertificate Module.
- **Access to an external SFTP server from NetSuite:** See the help topic SSH Keys for SFTP. See also SFTP Authentication.
- **DNS Lookups:** If you cannot take advantage of any of the previous options, advanced firewall tools can perform a lookup on the DNS record `outboundips.netsuite.com` and automatically grant access to requests from NetSuite.
- **Email services:** See the help topic Email Best Practices.

To access a NetSuite service (routing), see the following topics:

- Understanding NetSuite URLs
- URLs for Account-Specific Domains
- How to Transition from Data Center-Specific Domains

In cases where an application accesses more than one NetSuite account, you can use APIs for dynamic service discovery. See Dynamic Discovery of URLs for SOAP Web Services and RESTlet Clients.

CDNs in the NetSuite Global Distribution Network

Oracle NetSuite has enhanced our global distribution network by incorporating Content Delivery Networks, or CDNs. A CDN is a system of connected servers that improve application response times by caching and delivering data using the geographical proximity of a server to an end user.

Warning: NetSuite cannot predict the IP addresses CDN providers use to serve `*.netsuite.com` requests.

Due to our partnership with CDN providers, we cannot predict the IP addresses that are used to serve inbound requests to `*.netsuite.com` requests. If you are programming a firewall for your company's outbound requests (inbound to NetSuite) please allow all `*.netsuite.com` entry points.

The authenticity of NetSuite services is ensured by PKI (Public Key Infrastructure) certificates.

Supported TLS Protocol and Cipher Suites

The Transport Layer Security (TLS) protocol is an established method for ensuring private, trustworthy, and reliable communication between computer programs over a network. Each new version of the TLS protocol enhances these qualities. Versions TLS 1.2 and TLS 1.3 are currently supported for use in NetSuite. Computer programs use the TLS protocol to establish communication with each other.

The TLS protocol is used for computer programs that connect using URLs that begin with `https://` (the **s** indicates **secure**). URLs that begin with `http://` are not subject to the TLS protocol.

For more information about the TLS protocol, see:

- A definition from Wikipedia: Transport Layer Security.
- The specification of the protocol: RFC 5246 - The Transport Layer Security (TLS) Protocol.

Important: All inbound and outbound secure communication must use TLS 1.2 or TLS 1.3.

See the following sections for more information about:

- Supported Cipher Suites
- Server Name Indication (SNI) is Required
- Certificate Pinning is Not Supported

For more information about opportunistic TLS for outbound and inbound email, see the help topic Opportunistic TLS and NetSuite Email.

Note: If you are looking for information about supported browsers, see the help topics Supported Browsers for NetSuite and Supported Browsers for Commerce Websites.

Supported Cipher Suites

The supported cipher suites can vary by the TLS version, and by the type of service or feature. See the following sections for details:

- Cipher Suites for NetSuite Account Services and Commerce
  - TLS version 1.2 Cipher Suites
  - TLS version 1.3 Cipher Suites
  - Cipher Suites for SuiteCommerce Websites Only
- Cipher Suites for Email Services
- Cipher Suites for the SuiteScript N/sftp Module
- Obsolete Cipher Suites

Cipher Suites for NetSuite Account Services and Commerce

Important: The lists of supported cipher suites are subject to change at any time. It is your responsibility to be aligned with the highest possible level of security available in the industry.

The following cipher suites are supported for NetSuite services, for example, access to the NetSuite UI, SOAP web services, SuiteCommerce websites, and SuiteAnalytics Connect.

Note: For all NetSuite services, you must ensure that your TLS clients support Server Name Indication (SNI). For more information, see Server Name Indication (SNI) is Required.

TLS version 1.2 Cipher Suites

Only TLS version 1.2 cipher suites are supported for use with SuiteAnalytics Connect.

Note: Support for CBC cipher suites ended on July 15, 2021 for all NetSuite services.

IANA Name	OpenSSL Name
TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256	ECDHE-ECDSA-AES128-GCM-SHA256
TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384	ECDHE-ECDSA-AES256-GCM-SHA384
TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384	ECDHE-RSA-AES256-GCM-SHA384
TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256	ECDHE-RSA-AES128-GCM-SHA256

TLS version 1.3 Cipher Suites

The IANA and OpenSSL names for these TLS 1.3 cipher suites are the same.

IANA and OpenSSL Name
TLS_AES_256_GCM_SHA384
TLS_CHACHA20_POLY1305_SHA256
TLS_AES_128_GCM_SHA256

Cipher Suites for SuiteCommerce Websites Only

In addition to the cipher suites listed in Cipher Suites for NetSuite Account Services and Commerce, the following cipher suites are supported for SuiteCommerce websites only.

Note: The ECDHE–ECDSA cipher suites require that the server's certificate contain an ECDSA-capable public key.

IANA Name	OpenSSL Name
TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256	ECDHE-ECDSA-AES128-GCM-SHA256
TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384	ECDHE-ECDSA-AES256-GCM-SHA384
TLS_ECDHE_ECDSA_WITH_AES_128_CBC_SHA256	ECDHE-ECDSA-AES128-SHA256

Cipher Suites for Email Services

The cipher suites listed in the following table are supported for use with email services (for example, Microsoft Outlook).

IANA Name	OpenSSL Name
TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384	ECDHE-RSA-AES256-GCM-SHA384
TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256	ECDHE-RSA-AES128-GCM-SHA256
TLS_DHE_RSA_WITH_AES_128_GCM_SHA256	DHE-RSA-AES128-GCM-SHA256
TLS_DHE_RSA_WITH_AES_256_GCM_SHA384	DHE-RSA-AES256-GCM-SHA384

Support is targeted to end soon for the cipher suites listed in the following table.

IANA Name	OpenSSL Name
TLS_RSA_WITH_AES_128_GCM_SHA256	AES128-GCM-SHA256
TLS_RSA_WITH_AES_256_GCM_SHA384	AES256-GCM-SHA384

Cipher Suites for the SuiteScript N/sftp Module

The SFTP module for SuiteScript also requires TLS encryption. For more information about the supported cipher suites for the N/sftp Module in SuiteScript, see the help topic Supported Cipher Suites and Host Key Types.

Obsolete Cipher Suites

Note: As of February 2020, support ended for any cipher suite using the message authentication SHA-1 algorithm for access to the NetSuite UI or SuiteCommerce websites. Cipher suites that use the SHA-1 algorithm have the suffix **SHA**.

The cipher suites listed in the following tables are considered obsolete. They are not supported for use with all NetSuite services.

Note: Support for the CBC cipher suites listed in the following table ended on July 15, 2021 for all NetSuite services.

IANA Name	OpenSSL Name
TLS_ECDHE_ECDSA_WITH_AES_256_CBC_SHA384	ECDHE-ECDSA-AES256-SHA384
TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA384	ECDHE-RSA-AES256-SHA384
TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA	ECDHE-RSA-AES256-SHA
TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA	ECDHE-RSA-AES128-SHA
TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA256	ECDHE-RSA-AES128-SHA256

The following cipher suites (indicated with two asterisks **) are **currently supported for email services**, but are **not supported** for access to the NetSuite UI, SOAP Web Services, SuiteCommerce websites, or SuiteAnalytics Connect.

IANA Name	OpenSSL Name
TLS_RSA_WITH_AES_128_GCM_SHA256 **	AES128-GCM-SHA256 **

IANA Name	OpenSSL Name
TLS_RSA_WITH_AES_256_GCM_SHA384 **	AES256-GCM-SHA384 **
TLS_DHE_RSA_WITH_AES_128_GCM_SHA256 **	DHE-RSA-AES128-GCM-SHA256 **
TLS_DHE_RSA_WITH_AES_256_GCM_SHA384 **	DHE-RSA-AES256-GCM-SHA384 **

Server Name Indication (SNI) is Required

Server Name Indication, or SNI, is an extension to the TLS protocol. SNI lets a TLS client indicate which hostname it is attempting to connect to during the TLS handshake. All browsers and standard clients use SNI. Access to Commerce websites have required SNI for quite some time. All TLS clients should also support SNI.

If you are using currently supported cipher suites but some of your integrations are still experiencing failures, verify that all your TLS clients are configured to provide SNI. It has been observed that some TLS clients are configured with SNI turned off.

Certificate Pinning is Not Supported

Do not use any form of certificate pinning (for example, HPKP headers) on any NetSuite service, or for access to the NetSuite UI. NetSuite certificates can change at any time and without notice. If you pin a NetSuite certificate, access to NetSuite can be denied after a certificate is changed.

VPN Configuration for User Access to NetSuite

Oracle NetSuite does not support traffic that is routed through a split-tunnel Virtual Private Network (VPN) to control user access to NetSuite.

In a full-tunnel VPN configuration:

- Users connect to the internet indirectly, using the company's VPN server.
- Users are represented by the single IP address of the company's VPN server.

In a split-tunnel VPN configuration:

- The VPN client routes calls from users to a host (specified in the URL) based on the target host's IP address.
- Depending on how the routing is performed, users are represented on the internet either by the IP address of the Internet Service Provider (ISP) or by the IP address of company's VPN server.

To ensure users' access to their NetSuite account, a company using a split-tunnel VPN would need to hard-code an IP address for a specific NetSuite data center in the company's VPN configuration. Such a configuration would no longer work after the NetSuite account is moved to a different data center.

A role that has access restricted by IP address rules would no longer work after the move. In this case, the hard-coded IP address in the VPN would no longer be valid, therefore the traffic would be routed through the internet. The user would be represented by the IP address of an ISP, instead of by the IP address of the company's VPN server. (See the help topic Enabling and Creating IP Address Rules for more information about the **Restrict this role by IP Address** feature.)

References to NetSuite that use IP addresses are too fragile to be reliable in a cloud environment. NetSuite IP addresses can change without notice. In addition, a split-tunnel VPN configuration cannot take advantage of the Content Delivery Networks (CDNs) in the Oracle NetSuite global infrastructure.

Note: If you choose to use a full-tunnel VPN, be aware that this configuration does not ensure the same performance as when no VPN is present.

Traffic Health

The Oracle NetSuite cloud infrastructure is constantly growing to meet the needs of our expanding customer base.

The Traffic Health page can help you evaluate live incoming traffic data for your NetSuite accounts. You should evaluate this data to understand whether changes will be required for your accounts to be ready for upcoming changes in the Oracle NetSuite cloud infrastructure. You can review the traffic data to help you identify non-compliant incoming traffic. Non-compliant traffic means traffic that uses a data center-specific domain. After you identify the non-compliant incoming traffic, you must make updates so that the traffic is sent to account-specific domains.

Using Traffic Health

Correcting Data Center-Specific URLs in Your Account

You must ensure that incoming traffic is compliant with the requirement that your account, when necessary, can be moved to a different data center. Compliance with this requirement ensures that your account can be moved without affecting the operation of your integrations or blocking incoming traffic. As Oracle NetSuite expands into data centers around the globe, there is the probability that the hosting location your account may be optimized to achieve the best service. You must ensure that the traffic coming into your account is ready. Your incoming traffic must use account-specific domains. If an integration is used in more than one account, the integration must use dynamic methods to discover the correct domain.

You can generate a Traffic Health report to help you identify traffic in your account that is using data center-specific domains. See the following sections for more information:

- Traffic Health Reports
- NetSuite UI
- SOAP Web Services
- RESTlets
- External Suitelets
- External Forms
- Commerce
- Inbound Email
- File Cabinet

Note: SuiteAnalytics Connect and REST Web Services integrations do not require review. These integrations exclusively use account-specific domains, so these integrations are not examined by Traffic Health.

Traffic Health Reports

Traffic Health reports identify URLs that use data center-specific domains in your account. You must change the data center-specific domains in the URLs to your account-specific domains. To make the necessary changes to a data center-specific URL:

- You may need the help of a developer in your company.

- You may need to ask your company's IT department to locate the owner of the integration, or the owner of the link to an external form.
- You may need to contact a partner who set up an integration, or the third-party who supplied an integration.

For more information about account-specific domains, see How to Transition from Data Center-Specific Domains.

Administrators and other users with the Set Up Company permission can access the Traffic Health tool at Setup > Company > Company Management > Traffic Health. The first time this page is accessed in an account, click **Generate Report** to populate the report.

Generating a Traffic Health Report

Each area of NetSuite traffic is evaluated using a specific set of parameters. The Traffic Health report displays results for many NetSuite services. The rows listed in each section of the report can help you to locate the source of the problem. In many cases, you can resolve problems by using an account-specific domain, or by using a method for dynamically discovering the correct domain.

Resolve the items listed for each service, then generate a new report to ensure that there are no more items for you to resolve. Continue this process (fixing all items then generating a new report) until all sections of the report contain the message **No records to show**.

- The combination of parameters with the highest number of occurrences appearing in the **Count** column may point out the severity of an issue. Items are listed in order of highest count first.

  Important: The order of the listed items may not be the same as the way you would rank the severity according to business priority.

- There is a limit of 50 rows listed for each service on a generated report. If a section of the report returns 50 rows, and you wish to view the complete list of results, contact NetSuite Customer Support.
- A single integration can be represented by multiple rows on a section of the report, based on the combination of parameters evaluated. Each row represents a single use case. For example, a row can represent when an integration was run from a different computer, or when an integration connects to a different endpoint with different parameters.

To generate a Traffic Health report:

1. Go to Setup > Company > Company Management > Traffic Health.
2. Click **Generate** to create a fresh report. By default, the report displays activity for the last seven days.
3. Click each of the sections of the report to verify whether there is any incoming traffic using data center-specific domains.
   a. If you see the message **No records to show**, congratulations, all incoming traffic is using account-specific domains.
   b. If you see items listed in a section of the report, you must identify the non-compliant traffic, and determine the severity. The severity determines the order in which you will update the items in the list to use an account-specific domain or a dynamic discovery method when appropriate.
4. For more information on how to correct items listed on your report, see the following topics:
   - NetSuite UI
   - SOAP Web Services
   - RESTlets
   - External Suitelets

- External Forms
- Commerce
- Inbound Email
- File Cabinet

5. As you correct items listed in a Traffic Health report, you may want to generate a fresh report to verify that the items have been fixed.
   - By default, the initial report displays the last seven days of non-compliant traffic for your account.
   - When you generate subsequent reports, you can select a value for the desired time period: the **Last hour**, the **Last 7 days**, or the **Last 24 hours**.
   - The timestamps and fixed periods are based on the Pacific time zone.
   - Text on the page informs you of how long you must wait before generating another report, and when the current report was generated.

NetSuite UI

All incoming traffic to the NetSuite UI that is using a data center-specific domain for your account is listed in this section of the report.

Correcting Your NetSuite UI Traffic

The data listed in each column indicates where to find the NetSuite UI traffic that is using a data center-specific domain. You should update the source of the traffic to use your account-specific domain URL.

Traffic Health reports identify URLs that use data center-specific domains in your account. You must change the data center-specific domains in the URLs to your account-specific domains. To make the necessary changes to a data center-specific URL:

- You may need the help of a developer in your company.
- You may need to ask your company's IT department to locate the owner of the link to an external form using the Referrer field.
- You may need to contact a partner, or a third-party supplier.

For more information about account-specific domains, see How to Transition from Data Center-Specific Domains.

The following procedure assumes that you have already generated a report. If this is not the case, or if you want to refresh the report data, see Generating a Traffic Health Report.

To correct the items reported for the NetSuite UI:

1. Click **NetSuite UI**.
   a. If you see the message **No records to show**, all of the NetSuite UI traffic in your account is using account-specific domains.
   b. If you see items listed in this section of the report, you must identify the non–compliant traffic, and determine the severity.

      Use the number in the **Count** column to determine the priority of the updates you should make. The higher the count, the higher the priority to make updates to use an account-specific domain.
   c. The Referrer column indicates the source of the traffic.

Note: Every line reported in the list may indicate a separate instance of NetSuite UI traffic.

Column Name	How This Information Can Help You Identify the Traffic
Host	Domain name (Host header) associated with an incoming HTTP request.
URL Path	Same as the path that shown in the Host column, but the URL Path does not include the domain.
Query String	Includes the Script ID or Deployment ID of the script. You do not need to locate the particular script using those IDs. The problem is with the user agent that is calling the script. The script, or query string parameter, identifies the external Suitelet ID instance being called. Determining the purpose of the external Suitelet will help you to narrow down the scope of integration clients that need to be updated.
Referrer	If the Referrer column is blank, this can indicate: ■ a bookmark ■ an email client downloading content displayed in an email message ■ a search engine bot
Response Code	HTTP response status code. Failures of requests using a data center-specific URL with 200, 300, and 500 series response codes are listed in this report. ■ **200 series response codes:** The request was processed, but it does not mean the request routing (the domain used in the request) is correct. ■ **300 series response codes:** Indicates the response was redirected. However, it also indicates that the request routing (the domain used in the request) should be fixed. Examples of some of the 300 series response codes include: □ **301 Moved Permanently** □ **302 Found** □ **308 Permanent Redirect** ■ **500 series response codes:** The operation failed on the NetSuite side because the server could not process the response. You may need to fix the request routing (the domain used in the request). You should also investigate what else may be wrong with the request that caused the server to fail to process the request. For more information about HTTP status codes, refer to the following websites: ■ Mozilla: HTTP response status codes ■ Wikipedia: List of HTTP status codes
Count	The number of times during the reporting period that the traffic with the same parameters used a data center-specific domain. Count can help you to determine the severity of the problem. Prioritize correcting line items with a high value in the **Count** column. A higher number indicates a larger volume of traffic is using a data center-specific URL.

2. Update each instance in the list so that the traffic uses account-specific domains.
3. After you have updated all of the instances of NetSuite UI traffic listed in the original report, generate a fresh report to validate that there is no NetSuite UI traffic in your account that is using data center-specific domains.

4. Repeat this entire procedure as needed to continue correcting items listed on your Traffic Health report until no items remain in the list.

SOAP Web Services

All incoming SOAP web services traffic to your account using a data center-specific domain is listed in this section of the report.

Correcting Your SuiteTalk SOAP Web Services Integrations

The data listed in each column indicates where to find the SOAP web services integration. You should update the integration to use your account-specific domain or to use a dynamic service discovery method to obtain the URL.

Traffic Health reports identify URLs that use data center-specific domains in your account. You must change the data center-specific domains in the URLs to your account-specific domains. To make the necessary changes to a data center-specific URL:

- You may need the help of a developer in your company.
- You may need to ask your company's IT department to locate the owner of the integration.
- You may need to contact a partner who set up an integration, or the third-party supplier of an integration.

For more information about account-specific domains, see How to Transition from Data Center-Specific Domains.

The following procedure assumes that you have already generated a report. If this is not the case, or if you want to refresh the report data, see Generating a Traffic Health Report.

To correct the items reported for SOAP Web Services:

1. Click **SOAP Web Services**.
    a. If you see the message **No records to show**, all of your SOAP web services integrations are using account-specific domains.
    b. If you see items listed in this section of the report, you must identify the non-compliant traffic, and determine the severity.

    Use the number in the **Count** column to determine the priority of the updates you should make. The higher the count, the higher the priority to make updates to use an account-specific domain or a dynamic discovery method.

    Note: Every line reported in the list may indicate a separate integration.

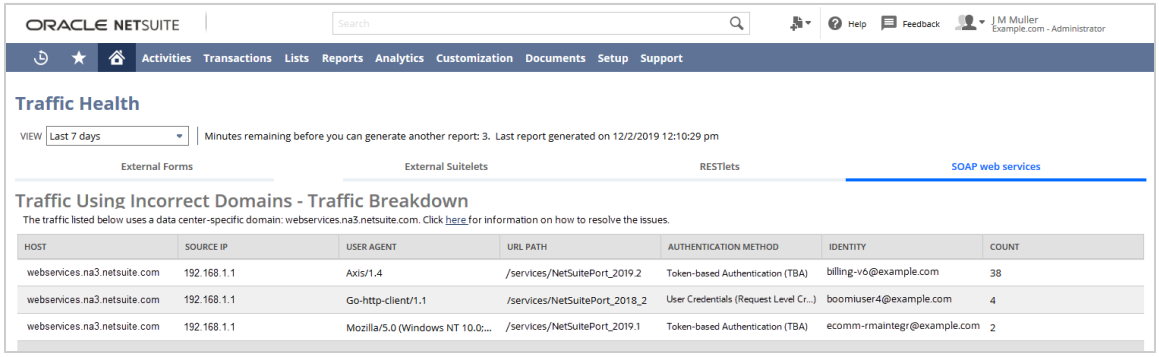
Column Name	How This Information Can Help You Identify the Traffic
Host	Domain name (Host header) associated with an incoming HTTP request.
Source IP	Originating IP address of the request. Indicates the IP address that NetSuite sees as the IP address from which the traffic originates. This IP address may be translated by a NAT (Network Address Translation) device, which operates in the network where your integration server runs.
User Agent	A user agent is software that acts on behalf of the user. Browsers are one type of user agent. The information in this column can identify the application type, operating system, software vendor, or software version of the requesting software user agent.

Column Name	How This Information Can Help You Identify the Traffic
	For SOAP web services, the user agent indicates the name of your HTTP or integration client. The user agent may contain the name of the programming language used to create the integration client. For example, if **MS Web Services Client Protocol** is part of the user agent name, it indicates a .NET SOAP web services implementation. User agent names beginning with **PHP-SOAP** usually indicate PHP clients implemented with the NetSuite PHP Toolkit.
URL Path	Same as the path that shown in the Host column, but the URL Path does not include the domain.
Authentication Method	May give indications about the implementation. For example, if token-based authentication is listed in this column, it may mean that the integration was implemented fairly recently. Possible authentication methods are: ■ Token-based Authentication (TBA) ■ User Credentials (login operation and subsequent calls) ■ User Credentials (Request Level Credentials) ■ NetSuite Inbound SSO ■ SuiteSignOn (Outbound SSO) ■ No explicit authentication information provided.
Identity	The email address can name the purpose of the integration, or indicate the use case. The email address could point to a partner or a third-party integration. For example, the email address may look similar the following: ■ boomiuser2@example.com ■ salesforce-integr@example.com ■ commerce-refundintegration@example.com ■ billing-v4@example.com
Response Code	HTTP status code. Failures of requests using a data center-specific URL with 200, 300, and 500 series response codes are listed in this report. ■ **200 series response codes:** The request was processed, but it does not mean the request routing (the domain used in the request) is correct. ■ **300 series response codes:** Indicate that the response was redirected. However, it also indicates that the request routing (the domain used in the request) should be fixed. Examples of some of the 300 series response codes include: □ **301 Moved Permanently** □ **302 Found** □ **308 Permanent Redirect** ■ **500 series response codes:** The operation failed on the NetSuite side because the server could not process the response. □ You may need to fix the request routing (the domain used in the request). □ You should also investigate what else may be wrong with the request that caused the server to fail to process the request. For more information about HTTP status codes, refer to the following websites: ■ Mozilla: HTTP response status codes ■ Wikipedia: List of HTTP status codes

Column Name	How This Information Can Help You Identify the Traffic
Count	The number of times during the reporting period that the traffic with the same parameters used a data center-specific domain. Count can help you to determine the severity of the problem. Prioritize correcting line items with a high value in the **Count** column. A higher number indicates a larger volume of traffic is using a data center-specific URL.

2. Update SOAP web services integrations. To help you determine what to do, see the following:
   - If the integration will run in multiple NetSuite accounts, and you use a WSDL file as a source for the schema and NetSuite Port URL, you should always use a WSDL downloaded from **https://webservices.netsuite.com/wsdl/v<version>/netsuite.wsdl**, where <version> is the web services (WSDL) schema for the endpoint you are currently using. For more information, see the help topic NetSuite WSDL and XSD Structure. Also, you must use getDataCenterUrls to retrieve the correct URL for each account you integrate with where you are running SOAP web services. For example:
     - If you are a partner developing SOAP web services integrations for more than one NetSuite customer, you must use dynamic discovery methods.
     - If you are a NetSuite customer and you intend to run the SOAP web services integration in your NetSuite production, sandbox, Release Preview, or other account type, you should use a dynamic discovery method to determine the correct URL.
   - If you do not use a WSDL file for discovering the schema and NetSuite Port URL, you should:
     - Use the URL **https://webservices.netsuite.com/services/NetSuitePort_<version>** for running the getDataCenterUrls discovery method in order to get the correct URL for your account.
     - If you cannot use a dynamic discovery method, use your account-specific URL in the format **https://<accountID>.suitetalk.api.netsuite.com/services/NetSuitePort_<version>**. Administrators and other users with the Set Up Company permission can go to Setup> Company > Company Information and click the **Company URLs** subtab to view the account-specific domains available for the account where they are currently logged in.
3. After you have updated all of the SOAP web services listed in the original report, generate a fresh report to validate there are no SOAP web services in your account that are using data center-specific domains.
4. Repeat this entire procedure as needed to continue correcting items listed on your Traffic Health report until no items remain in the list.

See the following for an example of items listed for SOAP web services after a report was generated:



RESTlets

All RESTlets traffic to your account using a data center-specific domain is listed in this section of the report.

Correcting Your RESTlets Integrations

The data listed in each column indicates where to find the RESTlet. You should update the RESTlet to use your account-specific domain or to use a dynamic service discovery method to obtain the URL.

Traffic Health reports identify URLs that use data center-specific domains in your account. You must change the data center-specific domains in the URLs to your account-specific domains. To make the necessary changes to a data center-specific URL:

- You may need the help of a developer in your company.
- You may need to ask your company's IT department to locate the owner of the integration.
- You may need to contact a partner who set up an integration, or the third-party supplier of an integration.

For more information about account-specific domains, see How to Transition from Data Center-Specific Domains.

The following procedure assumes that you have already generated a report. If this is not the case, or if you want to refresh the report data, see Generating a Traffic Health Report.

To correct the items reported for RESTlets:

1. Click **RESTlets**.
   a. If you see the message **No records to show**, your RESTlet integrations are using account-specific domains.
   b. If you see items listed in this section of the report, you must identify the non-compliant traffic, and determine the severity.

      Use the number in the **Count** column to determine the priority of the updates you should make. The higher the count, the higher the priority to make updates to use an account-specific domain.

      Note: Every line reported in the list may indicate a separate integration or a specific use case of a RESTlet.

      - For RESTlets, the most important information is located in the **Query String** field.
      - The **Source IP** and the **User Agent** fields will help you to discover the source of the traffic.
      - The **Identity** contains the email address associated with the traffic.

Column Name	How This Information Can Help You Identify the Traffic
Host	Domain name (Host header) associated with an incoming HTTP request.
Source IP	Originating IP address of the request. Indicates the IP address that NetSuite sees as the IP address from which the traffic originates. This IP address may be translated by a NAT (Network Address Translation) device, which operates in the network where your integration server runs.

Column Name	How This Information Can Help You Identify the Traffic
User Agent	A user agent is software that acts on behalf of the user. Browsers are one type of user agent. The information in this column can identify the application type, operating system, software vendor, or software version of the requesting software user agent. For RESTlets, the user agent indicates the name of your HTTP or integration client. The user agent may contain the name of the programming language used to create the integration client. Examples include **python-requests** or **PHP RestClient**. The Ruby programming language is becoming very popular for RESTlet implementations. If the programming language is Ruby, you would see **OAuth gem** as part of the user agent.
Query String	Includes the Script ID or Deployment ID of the script. You do not need to locate the particular script using those IDs. The problem is with the user agent that is calling the script. The script, or query string parameter, identifies the RESTlet ID instance being called. Determining the purpose of a RESTlet will help you narrow down the scope of integration clients that need to be updated.
Identity	The email address can name the purpose of the integration, or indicate the use case. The email address could point to a partner or a third-party integration. - boomiuser2@example.com - salesforce-integr@example.com - commerce-refundintegration@example.com - billing-v4@example.com

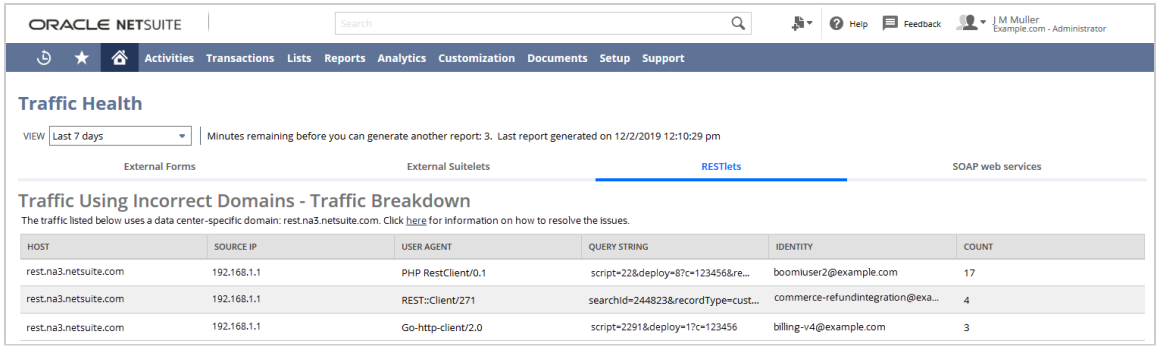
Response Code	HTTP response status code.
	Failures of requests using a data center-specific URL with 200, 300, and 500 series response codes are listed in this report.
	- **200 series response codes:** The request was processed, but it does not mean the request routing (the domain used in the request) is correct.
	- **300 series response codes:** Indicate that the response was redirected. However, it also indicates that the request routing (the domain used in the request) should be fixed.
	Examples of some of the 300 series response codes include:
	  - **301 Moved Permanently**
	  - **302 Found**
	  - **308 Permanent Redirect**
	- **500 series response codes:** The operation failed on the NetSuite side because the server could not process the response.
	  - You may need to fix the request routing (the domain used in the request).
	  - You should also investigate what else may be wrong with the request that caused the server to fail to process the request.
	For more information about HTTP status codes, refer to the following websites:
	- Mozilla: HTTP response status codes
	- Wikipedia: List of HTTP status codes

Count	The number of times during the reporting period that the traffic with the same parameters used a data center-specific domain.

Column Name	How This Information Can Help You Identify the Traffic
	Count can help you to determine the severity of the problem. Prioritize correcting line items with a high value in the **Count** column. A higher number indicates a larger volume of traffic is using a data center-specific URL.

2. Update RESTlet integrations so that they either use your account-specific domain or use a method to dynamically discover the correct URL. For more information about dynamic discovery for RESTlets, see DataCenterUrls REST Service. To help you determine whether you should you use an account-specific domain or a dynamic discovery method, see the following:
   - If the integration will run in multiple NetSuite accounts, you must use getDataCenterURLs to retrieve the correct URL for the accounts that you integrate with from **https://rest.netsuite.com/rest/datacenterurls**. Situations where you must use dynamic discovery methods to determine the correct URL include, for example:
     - If you are a partner developing RESTlet integrations for more than one NetSuite customer.
     - If you are a NetSuite customer and you intend to run the RESTlet integration in your NetSuite production, sandbox, Release Preview, or other account type.
   - If the integration will run in a single NetSuite account, use a RESTlet URL with your account-specific domain. Administrators and other users with the Set Up Company permission can go to Setup> Company > Company Information and click the **Company URLs** subtab to view the account-specific domains available for the account where they are currently logged in.
3. After you have updated all of the RESTlets listed in the original report, generate a fresh report to validate there are no RESTlets in your account that are using data center-specific domains.
4. Repeat this entire procedure as needed to continue correcting items listed on your Traffic Health report until no items remain in the list.

See the following for an example of items listed for RESTlets after a report was generated:



External Suitelets

External Suitelets incoming traffic (/app/site/hosting/scriptlet.nl) to your account using a data center-specific domain is listed in this section of the report.

An external Suitelet is a Suitelet where the **Available without Login** box is checked on the script record. Some implementations include a hard-coded data center-specific URL, and use a POST or PUT method without initially performing a GET. For example, some forms on websites have an action parameter which directly POST data to NetSuite through an external Suitelet. In this use case, if the Suitelet uses a data center-specific URL, this data collection action will fail after an account move.

Correcting Your External Suitelets

The data listed in each column indicates where to find the Suitelet. You should update the Suitelet to use your account-specific domain or to use a dynamic service discovery method to obtain the URL.

Traffic Health reports identify URLs that use data center-specific domains in your account. You must change the data center-specific domains in the URLs to your account-specific domains. To make the necessary changes to a data center-specific URL:

- You may need the help of a developer in your company.
- You may need to ask your company's IT department to locate the owner of the integration.
- You may need to contact a partner who set up an integration, or the third-party supplier of an integration.

For more information about account-specific domains, see How to Transition from Data Center-Specific Domains. The account-specific domain for the external URL is shown on the script deployment record. See also URLs for Suitelets and Suitelet Script Deployment Page Links Subtab. For access or redirection from another script to a Suitelet, the best practice is to use url.resolveScript(options) to discover the URL instead of hard-coding the URL.

The following procedure assumes that you have already generated a report. If this is not the case, or if you want to refresh the report data, see Generating a Traffic Health Report.

To correct the items reported for External Suitelets:

1. Click **External Suitelets**.
   a. If you see the message **No records to show**, your external Suitelets are using account-specific domains.
   b. If you see items listed in this section of the report, you must identify the non-compliant traffic, and determine the severity.

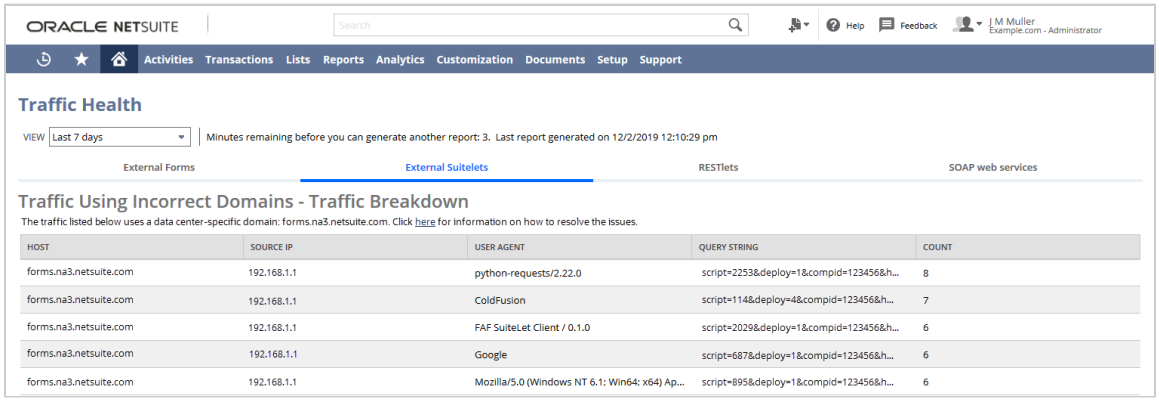
      Use the number in the **Count** column to determine the priority of the updates you should make. The higher the count, the higher the priority to make updates to use an account-specific domain.

Column Name	How This Information Can Help You Identify the Traffic
Host	Domain name (Host header) associated with an incoming HTTP request.
Source IP	Originating IP address of the request. Indicates the IP address that NetSuite sees as the IP address from which the traffic originates. This IP address may be translated by a NAT (Network Address Translation) device, which operates in the network where your integration server runs.
User Agent	A user agent is software that acts on behalf of the user. Browsers are one type of user agent. The information in this column can identify the application type, operating system, software vendor, or software version of the requesting software user agent. The user agent indicates the name of your HTTP or integration client. The user agent may contain the name of the programming language used to create the integration client. The user agent can also indicate whether the external Suitelet is invoked from a website or from a standalone script (for example, a python script).
Query String	Includes the Script ID or Deployment ID of the script. You do not need to locate the particular script using those IDs. The problem is with the user agent that is calling the script.

Column Name	How This Information Can Help You Identify the Traffic
	The script, or query string parameter, identifies the external Suitelet ID instance being called. Determining the purpose of the external Suitelet will help you to narrow down the scope of integration clients that need to be updated.
Response Code	HTTP response status code. Failures of requests using a data center-specific URL with 200, 300, and 500 series response codes are listed in this report. ■ **200 series response codes:** The request was processed, but it does not mean the request routing (the domain used in the request) is correct. ■ **300 series response codes:** Indicate that the response was redirected. However, it also indicates that the request routing (the domain used in the request) should be fixed. Examples of some of the 300 series response codes include: □ **301 Moved Permanently** □ **302 Found** □ **308 Permanent Redirect** ■ **500 series response codes:** The operation failed on the NetSuite side because the server could not process the response. □ You may need to fix the request routing (the domain used in the request). □ You should also investigate what else may be wrong with the request that caused the server to fail to process the request. For more information about these codes, refer to the following websites: ■ Mozilla: HTTP response status codes ■ Wikipedia: List of HTTP status codes
Count	The number of times during the reporting period that the traffic with the same parameters used a data center-specific domain. Count can help you to determine the severity of the problem. Prioritize correcting line items with a high value in the **Count** column. A higher number indicates a larger volume of traffic is using a data center-specific URL.

2. After you have updated all of the external Suitelets listed in the original report, generate a fresh report to validate there are no external Suitelets in your account that are using data center-specific domains.
3. Repeat this entire procedure as needed to continue correcting items listed on your Traffic Health report until no items remain in the list.

See the following for an example of items listed for External Suitelets after a report was generated:



External Forms

External forms incoming traffic to your account using a data center-specific domain is listed in this section of the report.

Correcting External Forms

The data listed in each column indicates where to find the script. You should update the script to use your account-specific domain or to use a dynamic service discovery method to obtain the URL.

Traffic Health reports identify URLs that use data center-specific domains in your account. You must change the data center-specific domains in the URLs to your account-specific domains. To make the necessary changes to a data center-specific URL:

- You may need the help of a developer in your company.
- You may need to ask your company's IT department to locate the owner of the link to an external form using the Referrer field.
- You may need to contact a partner, or a third-party supplier.

For more information about account-specific domains, see How to Transition from Data Center-Specific Domains.

The following procedure assumes that you have already generated a report. If this is not the case, or if you want to refresh the report data, see Generating a Traffic Health Report.

To correct the items reported for External Forms:

1. Click **External Forms**.
   a. If you see the message **No records to show**, your external forms are using account-specific domains.
   b. If you see items listed in this section of the report, you must identify the non-compliant traffic, and determine the severity.

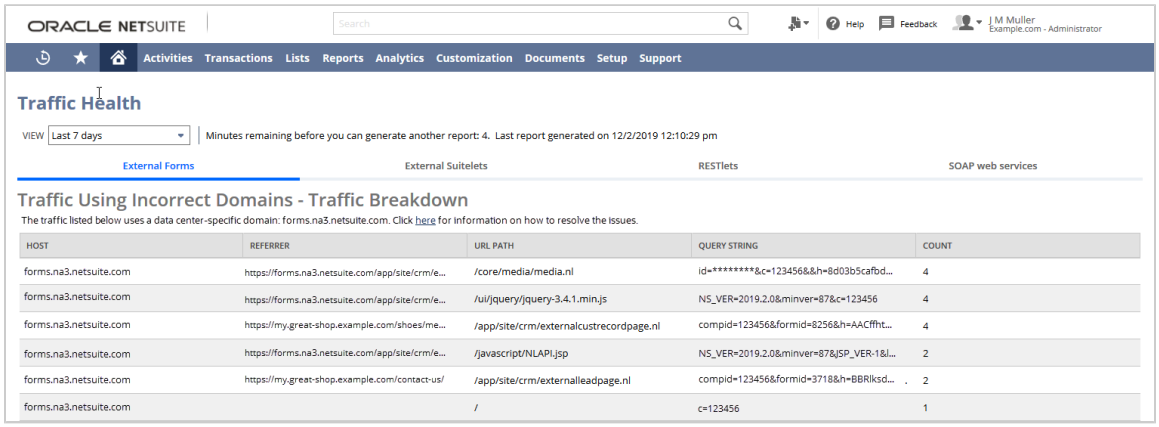
      Use the number in the **Count** column to determine the priority of the updates you should make. The higher the count, the higher the priority to make updates to use an account-specific domain.
   c. The Referrer column indicates the source of the traffic.

Column Name	How This Information Can Help You Identify the Traffic
Host	Domain name (Host header) associated with an incoming HTTP request.
Referrer	If the Referrer column is blank, this can indicate: ■ a bookmark ■ an email client downloading content displayed in an email message ■ a search engine bot
URL Path	Same as the path shown in the Host column, but the URL Path does not include the domain.
Query String	Includes the Script ID or Deployment ID to help you find where you must update the URL. The script, or query string parameter, identifies the external form instance being called.
Response Code	HTTP response status code. Failures of requests using a data center-specific URL with 200, 300, and 500 series response codes are listed in this report.

Column Name	How This Information Can Help You Identify the Traffic
	■ **200 series response codes:** The request was processed, but it does not mean the request routing (the domain used in the request) is correct. ■ **300 series response codes:** Indicate that the response was redirected. However, it also indicates that the request routing (the domain used in the request) should be fixed. Examples of some of the 300 series response codes include: □ **301 Moved Permanently** □ **302 Found** □ **308 Permanent Redirect** ■ **500 series response codes:** The operation failed on the NetSuite side because the server could not process the response. □ You may need to fix the request routing (the domain used in the request). □ You should also investigate what else may be wrong with the request that caused the server to fail to process the request. For more information about HTTP status codes, refer to the following websites: ■ Mozilla: HTTP response status codes ■ Wikipedia: List of HTTP status codes
Count	The number of times the traffic with the same parameters used a data center-specific domain was identified during the reporting period. Count can help you to determine the severity of the problem. Prioritize correcting line items with a high value in the **Count** column. A higher number indicates a larger volume of traffic is using a data center-specific URL.

2. After you have updated all of the external forms listed in the original report, generate a fresh report to validate there are no external forms in your account that are using data center-specific domains.
3. Repeat this entire procedure as needed to continue correcting items listed on your Traffic Health report until no items remain in the list.

See the following for an example of items listed for External Forms after a report was generated:



Commerce

All incoming Commerce-related traffic to your account that is using a data center-specific domain is listed in this section of the report.

Correcting Your Commerce Traffic

The data listed in each column indicates where to find the Commerce traffic that is using a data center-specific **shopping** or **checkout** domain. You should update the source of the traffic to use your account-specific domain URL.

Traffic Health reports identify URLs that use data center-specific domains in your account. You must change the data center-specific domains in the URLs to your account-specific domains. To make the necessary changes to a data center-specific URL:

- You may need the help of a developer in your company.
- You may need to ask your company's IT department to locate the owner of the integration.
- You may need to contact a partner who set up an integration, or the third-party supplier of an integration.

For more information about account-specific domains, see How to Transition from Data Center-Specific Domains.

The following procedure assumes that you have already generated a report. If this is not the case, or if you want to refresh the report data, see Generating a Traffic Health Report.

To correct the items reported for Commerce:

1. Click **Commerce**.
   a. If you see the message **No records to show**, all of the Commerce-related traffic in your account is using account-specific domains.
   b. If you see items listed in this section of the report, you must identify the non-compliant traffic, and determine the severity.

      Use the number in the **Count** column to determine the priority of the updates you should make. The higher the count, the higher the priority to make updates to use an account-specific domain.
   c. The Referrer column indicates the source of the traffic.

      Note: Every line reported in the list may indicate a separate instance of Commerce-related traffic.

Column Name	How This Information Can Help You Identify the Traffic
Host	Domain name (Host header) associated with an incoming HTTP request.
URL Path	Same as the path that shown in the Host column, but the URL Path does not include the domain.
Query String	Includes the Script ID or Deployment ID of the script. You do not need to locate the particular script using those IDs. The problem is with the user agent that is calling the script. The script, or query string parameter, identifies the external Suitelet ID instance being called. Determining the purpose of the external Suitelet will help you to narrow down the scope of integration clients that need to be updated.
Referrer	If the Referrer column is blank, this can indicate: ▪ a bookmark ▪ an email client downloading content displayed in an email message ▪ a search engine bot

Column Name	How This Information Can Help You Identify the Traffic
Response Code	HTTP response status code. Failures of requests using a data center-specific URL with 500 series response codes are listed in this report. **500 series response codes:** The operation failed on the NetSuite side because the server could not process the response. The operation did not fail because of the data center-specific URL. You must fix the URL, but you must also investigate what else is wrong that caused the server to fail to process the request. For more information about HTTP status codes, refer to the following websites: ■ Mozilla: HTTP response status codes ■ Wikipedia: List of HTTP status codes
Count	The number of times during the reporting period that the traffic with the same parameters used a data center-specific domain. Count can help you to determine the severity of the problem. Prioritize correcting line items with a high value in the **Count** column. A higher number indicates a larger volume of traffic is using a data center-specific URL.

2. Update each instance in the list so that the traffic uses account-specific domains.
3. After you have updated all of the instances of Commerce-related traffic listed in the original report, generate a fresh report to validate that there is no Commerce-related traffic in your account that is using data center-specific domains.
4. Repeat this entire procedure as needed to continue correcting items listed on your Traffic Health report until no items remain in the list.

Inbound Email

If the Email Case Capture feature is enabled in your account or if you are using the Email Capture Plug-in, all inbound email traffic to your account that is using a data center-specific domain is listed in this section of the report.

Correcting Your Inbound Email Traffic

The data listed in each column indicates where to find the inbound email traffic that is using a data center-specific domain. You should update the source of the traffic to use your account-specific domain.

Traffic Health reports identify URLs that use data center-specific domains in your account. You must change the data center-specific domains in the URLs to your account-specific domains. To make the necessary changes to a data center-specific URL:

- You may need the help of a developer in your company.
- You may need to ask your company's IT department to locate the owner of the integration.
- You may need to contact a partner who set up an integration, or the third-party supplier of an integration.

For more information about account-specific domains, see How to Transition from Data Center-Specific Domains.

The following procedure assumes that you have already generated a report. If this is not the case, or if you want to refresh the report data, see Generating a Traffic Health Report.

To correct your inbound email traffic:

1. Click **Inbound Email**.
   a. If you see the message **No records to show**, all of the inbound email-related traffic in your account is using account-specific domains.
   b. If you see items listed in this section of the report, you must identify the non-compliant traffic, and determine the severity.

      Use the number in the **Count** column to determine the priority of the updates you should make. The higher the count, the higher the priority to make updates to use an account-specific domain.

Column Name	How This Information Can Help You Identify the Traffic
Mail From	**Mail From** is the email address to which bounce messages are delivered (see RFC 5321). The Mail From field is also called the Return Path address, the Envelope From address, or the Bounce address. The Mail From address is used to inform the sender's system when an email cannot be delivered to a recipient's mailbox.
From	The **RFC 5322.From** field specifies the authors of the message, that is, the mailboxes of the persons or systems responsible for writing the message.
Subject	The subject line of the inbound email. Per RFC 5322, the subject is a short string identifying the topic of the message.
To	The **RFC 5322.To** field contains the addresses of the recipients of the message.
Envelope To	Displays the actual SMTP recipient who received the email. If someone sends email directly to a case handler email address (similar to cases...@cases.netsuite.com) there is no difference between the TO field and the ENVELOPE TO field. However, if, for example, you created an alias to obscure the actual case handler address from your customers, and added a rule to your email infrastructure, the TO and ENVELOPE TO fields could be different. The ENVELOPE TO address can help you determine what rule to look for in your email infrastructure. Change the rule to use your account-specific domain. (See RFC 5321. The ENVELOPE TO address is the same address as identified by the RECIPIENT (RCPT) command in the RFC.)
Count	The number of times during the reporting period that the traffic with the same parameters used a data center-specific domain. Count can help you to determine the severity of the problem. Prioritize correcting line items with a high value in the **Count** column. A higher number indicates a larger volume of traffic is using a data center-specific URL.

2. Update each instance in the list so that the inbound email traffic uses account-specific domains. See Viewing Your Inbound Email Account-Specific Domains for more information.
3. After you have updated all of the instances listed in the original report, generate a fresh report to validate that there is no inbound email-related traffic in your account that is using data center-specific domains.
4. Repeat this entire procedure as needed to continue correcting items listed on your Traffic Health report until no items remain in the list.

Viewing Your Inbound Email Account-Specific Domains

To view the account-specific domain used for general case capture:

1. Go to Setup > Support > Preferences > Support Preferences.
2. Click the **Inbound Email** subtab.

3. Copy the **NetSuite Address**. This field is displaying the account-specific domain **NetSuite Address** that you should be using for general case capture.
4. Use the account-specific domain NetSuite Address to replace data center-specific domains in use in your account or email infrastructure.

To view the account-specific domain attached to a case profile:

1. Go to Setup > Support > Case Profiles.
2. Click **View** on the desired profile.
3. Copy the **NetSuite Inbound Email Address**.
4. Use the account-specific **NetSuite Inbound Email Address** domain to replace data center-specific domains in use in your account or email infrastructure.

File Cabinet

All instances of users accessing files in the File Cabinet from a data center-specific domain in your account are listed in this section of the report.

Correcting File Cabinet URLs

Traffic Health reports identify URLs that use data center-specific domains in your account. You must change the data center-specific domains in the URLs to your account-specific domains. To make the necessary changes to a data center-specific URL:

- You may need the help of a developer in your company.
- You may need to ask your company's IT department to locate the owner of the item..
- You may need to contact a partner, or a third-party supplier.

For more information about account-specific domains, see How to Transition from Data Center-Specific Domains.

The following procedure assumes that you have already generated a report. If this is not the case, or if you want to refresh the report data, see Generating a Traffic Health Report.

To correct data center-specific URLs in your File Cabinet:

1. Click **File Cabinet**.
    a. If you see the message **No records to show**, all of files in your File Cabinet are using account-specific domains.
    b. If you see items listed in this section of the report, you must locate the file in the file cabinet, and make updates to use an account-specific domain. You may also need to check for a newer version of the file. The author or the origin of the file could be outside of your company.

       Use the number in the **Count** column to determine the priority of the updates you should make. The higher the count, the higher the priority to make updates to use an account-specific domain.

Column Name	How This Information Can Help You Identify the Traffic
File	The name of the file.

Column Name	How This Information Can Help You Identify the Traffic
Detail	Identifies how the file was accessed, for example, a link to the File Cabinet from an online form or a deep link embedded in an email.
Count	The number of times the file was opened during the reporting period.

2. Update each instance in the list so that the files use account-specific domains.
3. After you have updated all of the instances listed in the original report, generate a fresh report to validate that there are no files in your File Cabinetthat are using data center-specific domains.
4. Repeat this entire procedure as needed to continue correcting items listed on your Traffic Health report until no items remain in the list.See the following for an example of items listed for File Cabinet after a report was generated:

NetSuite Accounts Are Hosted in the Cloud

NetSuite accounts are hosted in various data centers around the globe. You should be aware of the importance of using best practices for NetSuite account access. Your goal should be to keep your NetSuite account free from data center-specific references. To take full advantage of our cloud architecture, you should not use data center-specific URLs for accessing NetSuite. You should transition away from data center-specific references. Best practices for integrations and customizations include using dynamic discovery methods for obtaining the correct URL, using relative rather than absolute URLs for referencing NetSuite objects, and using your account-specific domains to access specific services.

Important: Our cloud architecture is constantly growing and is continuously optimized. We do not provide fixed IP addresses. In a cloud architecture, you must not rely on IP address-based filters, for example, when configuring your company's firewall. See NetSuite IP Addresses for more information about alternatives to relying on IP addresses for restricting access to NetSuite.

For more information on your account-specific domain options, see URLs for Account-Specific Domains.

Your goal should be to ensure that, as much as possible, your account does not rely on data center-specific URLs. All processes, including customizations and integrations, can function properly without knowledge of where the account is hosted. The first step toward the goal is to remove dependencies on hard-coded URLs. See Dynamic Discovery of URLs for SOAP Web Services and RESTlet Clients for information.

In this section, see the following topics for more details:

- Understanding Access to the NetSuite User Interface
- Product Features That Must Use Best Practices for Access
- Testing in Release Preview or Sandbox Accounts

Understanding Access to the NetSuite User Interface

How users log in to the NetSuite user interface (UI) with a browser has not changed. All NetSuite users can enter the URL `https://system.netsuite.com` in a browser to access the standard NetSuite login page. Authenticated users are automatically redirected to the correct NetSuite account. The account-specific domain for UI access is displayed in the browser's address bar.

Follow these best practices for creating links and references to NetSuite objects and records to ensure that they are not data center-specific.

- Use NetSuite shortcuts rather than creating bookmarks in your browser. For more information on creating shortcuts in NetSuite, see the help topic Shortcuts Portlet.
- Use relative links to reference objects in NetSuite rather than absolute links.

Product Features That Must Use Best Practices for Access

Certain product features in an account, such as the following features, should not contain references to data center-specific URLs.

- SuiteTalk (web services) integrations
- SuiteScript
- Single Sign-on (SSO) configurations

- Customizations
- SuiteAnalytics Connect settings
- Web Store settings
- Email Campaign settings
- Email Case Capture settings
- External (Online) Forms

You may need to adjust your implementations of these features to use dynamic discovery methods or to use the URL that includes your account-specific domain. Wherever possible, replace hard-coded URLs in your account with dynamically discovered URLs. Some code containing hard-coded URLs cannot be changed to use dynamic discovery methods. In this case, modify data center-specific URLs to use your account-specific domain instead. For more information, see Best Practices for NetSuite Access by Feature.

Testing in Release Preview or Sandbox Accounts

Testing in your Release Preview account, when it is available, can be helpful to identify potential problems. If you have access to one or more sandbox accounts, you can also test in sandbox to identify potential problems. If you encounter difficulties when testing your production account integrations in Release Preview or in a sandbox account, it may indicate that your processes are referencing a specific data center or the wrong account ID. Testing in these accounts is not a foolproof method of finding all potential problems, but it can help to raise awareness in certain areas. For example, URLs may be hard-coded with data center-specific or account type-specific identifiers.

For more information about sandbox and Release Preview accounts, see the following topics:

- NetSuite Sandbox

Best Practices for NetSuite Access by Feature

The following table provides information to help you ensure your account, integrations, and customizations are not bound to a specific data center or type of account.

Feature	Summary of Concern	Relevant Help Topics
SuiteTalk (SOAP web services) integrations	Use the Traffic Health tool to verify that your SOAP web services do not contain data center-specific URLs. Web service integrations must use an account-specific domain for configuration, or dynamically determine the correct URL for NetSuite access.	See the following for more information: ■ Traffic Health ■ URLs for Account-Specific Domains ■ Dynamic Discovery of URLs for SOAP Web Services and RESTlet Clients
RESTlets	Use the Traffic Health tool to verify that your RESTlets do not contain data center-specific URLs.	If you have an integration that calls a RESTlet from outside of the NetSuite account where it is deployed, see the following for more information: ■ Traffic Health ■ URLs for Account-Specific Domains ■ Dynamic Discovery of URLs for SOAP Web Services and RESTlet Clients
External Suitelets	Use the Traffic Health tool to verify that your external Suitelets do not contain data center-specific URLs.	See the following for more information: ■ Traffic Health ■ URLs for Account-Specific Domains
External (Online) Forms	Use the Traffic Health tool to verify that your external forms do not contain data center-specific URLs. Using a script that creates NetSuite records by posting data directly to CRM forms without first performing a GET method to retrieve the data (also called screen scraping) is not supported.	See the following for more information: ■ Traffic Health ■ URLs for Account-Specific Domains.
Integrated clients	Integrated clients that access NetSuite must incorporate logic that determines the correct URL, so that these clients will work as desired. NetSuite provides tools to support dynamic discovery of URLs for integrated clients.	See the following for more information: ■ Traffic Health ■ URLs for Account-Specific Domains. ■ Dynamic Discovery of URLs for SOAP Web Services and RESTlet Clients

Feature	Summary of Concern	Relevant Help Topics
SuiteScript	Verify that your SuiteScript code does not contain hard-coded references to data center-specific URLs.	See the following for more information: ■ URLs for Account-Specific Domains.
Web Stores and Email Campaigns	Verify whether you are using best practices for: ■ An active website hosted on Site Builder (the original web store product) or Suite Commerce Advanced (the platform-based web store product). ■ Custom domains set up for email campaigns or secure checkout domains.	If you have domains that require DNS record updates, someone with DNS experience should make the changes. For more information, see the help topic Website Domains and Email Hosting.
Email Capture Plug-in	If you have implemented one or more Email Capture Plug-ins in your production account, each Email Capture Plug-in has a unique, dedicated email address. This address is usually mapped to an alias in your company's email infrastructure. You may need to update the email capture address in your email infrastructure. In some cases, email is sent from outside sources - people or applications - directly to the email capture address. You should inform these outside sources of any changes to the email capture address.	See the help topic Email Capture Plug-in Overview for more information. See also Create an Email Alias and Set Up Forwarding.
Email Case Capture	You may need to change the NetSuite Address used for case capture in your email infrastructure.	See the help topic Using Email Case Capture if you wish to review the initial setup instructions for case capture.
Shortcuts (in the NetSuite Shortcuts portlet), bookmarks (in your browser), or hard-coded links in customizations such as custom fields or tabs.	Verify that your customizations do not contain hard-coded references to data center-specific URLs.	See Understanding Access to the NetSuite User Interface for best practices.
SuiteAnalytics Connect ■ ODBC ■ JDBC ■ ADO.NET	If the SuiteAnalytics Connect feature is enabled in your NetSuite account, users may need to make updates to the data sources.	See the following topics: ■ Accessing the Connect Service Using an ODBC Driver. ■ Accessing the Connect Service Using a JDBC Driver. ■ Accessing the Connect Service Using an ADO.NET Data Provider.
WSDK Links and Scripts	If you are using an External Catalog for your website, verify the domains used in your external WSDK links and scripts. You must use the account-specific domain URLs in your external links and scripts. View these domains in each account at Commerce > Websites > Preview Website.	See the help topic Setting Up an External Catalog Site for more information.

Feature	Summary of Concern	Relevant Help Topics
	Perform a search and replace operation on your website files to change data center-specific occurrences of the shopping.netsuite.com domain to your account-specific domain.	

Understanding NetSuite URLs

You should always follow the best practice of ensuring that your NetSuite accounts and related integrations are not bound to a specific data center. As of NetSuite 2020.2, data center-specific domains for integrations are no longer supported. Do not hard-code URLs or other identifiers that specify a particular data center. Your integrations (such as SOAP web services and RESTlet clients) should use your account-specific domain for configuration or use dynamic discovery methods to obtain the correct URL.

See the following topics for more information:

- URLs for Account-Specific Domains
- Dynamic Discovery of URLs for SOAP Web Services and RESTlet Clients
- How to Transition from Data Center-Specific Domains
- Traffic Health

Dynamic Discovery of URLs for SOAP Web Services and RESTlet Clients

NetSuite accounts are sometimes moved from one data center to another to achieve optimal cloud resource utilization. In the past, the URLs used to access NetSuite were data center-specific, meaning they had to be changed after an account was moved to a different data center. In your NetSuite account, you should avoid using data center-specific URLs. You should use your account-specific URLs. Account-specific URLs to do not need to be updated after an account is moved o a different data center.

Do not attempt to construct an account-specific domain yourself. Each account (production, Release Preview, and sandbox) has a unique account-specific domain. The account-specific URLs for all services are shown on the Company URLs subtab of the Company Information page of your production, Release Preview, and sandbox accounts. In cases where an application accesses more than one NetSuite account, you can use dynamic discovery methods to obtain the correct URLs. See URLs for Account-Specific Domains for more information.

An external client that sends requests to a NetSuite account must use the correct domain name for that account. That is, a SOAP web services request sent to a NetSuite account must be sent to the correct web services domain for that account. A request to a RESTlet must be sent to a URL that includes the correct RESTlet domain for the account where the RESTlet is deployed. The following alternatives are designed for these use cases. These alternatives can be used in production, sandbox, and Release Preview accounts.

- You can use the SOAP web services operation getDataCenterUrls, which is available in the 2012.2 and later endpoints. You can send a getDataCenterUrls request to any NetSuite web services domain. This operation lets you retrieve the correct web services domain name for the specified NetSuite account.
- The REST Roles Service is a standalone service. You can send a request to any instance of the roles service and retrieve the correct RESTlet domain names for any NetSuite account to which you have login permission. You can use the REST roles service for external applications based on RESTlets.
- You can also use the DataCenterUrls REST Service to dynamically discover the correct domains. It provides the same information as the SOAP web services operation.
- For a NetSuite account that calls a RESTlet deployed in another NetSuite account, consider a solution that includes deployment of a version 2.0 SuiteScript. You can use the url.resolveDomain(options) to retrieve the RESTlet domain for any NetSuite account.

Important: Do not use any form of certificate pinning (for example, HPKP headers) on any NetSuite service. NetSuite certificates can change at any time and without notice. If you pin a NetSuite certificate, access to NetSuite can be denied after a certificate is changed.

URLs for Account-Specific Domains

Account-specific domains contain the account ID as part of the domain name. The account ID also identifies the account type, for example, whether the account is a production account, a sandbox account, or a Release Preview account. The account-specific domain is not dependent on the data center where an account is hosted. The domain does not change, even if the account is moved to a different data center.

Administrators and other users with the Set Up Company permission can go to Setup> Company > Company Information and click the Company URLs subtab to view the account-specific domains available for the account where they are currently logged in.

Important: Do not attempt to construct an account-specific domain yourself. Each account (production, Release Preview, and sandbox) has a unique account-specific domain. The correct URLs to use for each service in an account are listed on the Company URLs subtab of the Company Information page.

The URLs are listed on the Company URLs subtab for all services available in each account, including the Customer Center Login page, the NetSuite UI, SuiteTalk (SOAP and REST) web services, RESTlets, External Forms, External Catalog Sites (WSDK), and SuiteAnalytics Connect. External URLs for Suitelets are shown on the Script Deployment record.

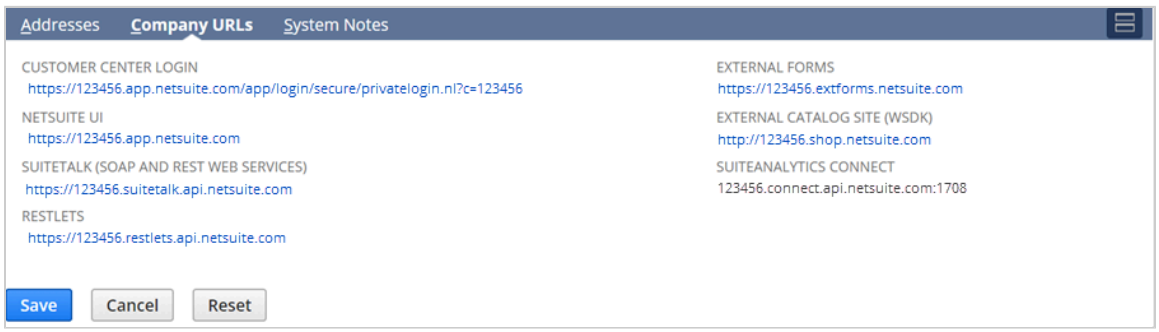
Important: Do not use any form of certificate pinning (for example, HPKP headers) on any NetSuite service. NetSuite certificates can change at any time and without notice. If you pin a NetSuite certificate, access to NetSuite can be denied after a certificate is changed.

See the following sections for more information:

- URLs for Production Accounts
- URLs for Sandbox Accounts
- URLs for Release Preview Accounts
- URLs for Suitelets

URLs for Production Accounts

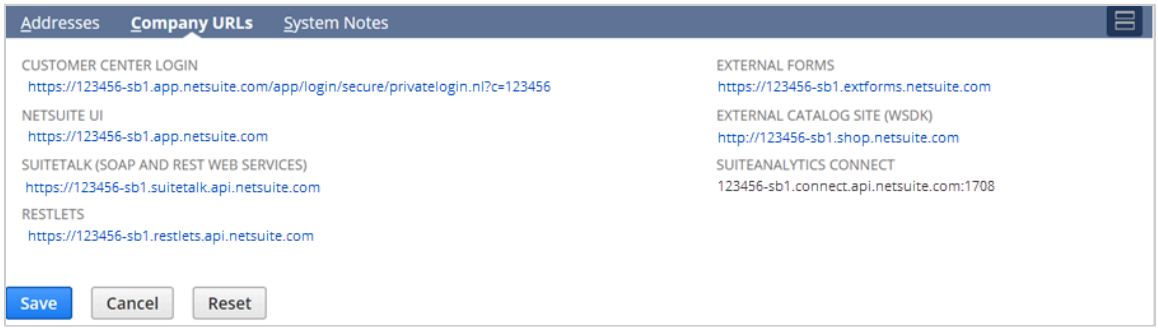
The Company URLs subtab would look like the following when logged in to the production account, if the account ID was 123456.



URLs for Sandbox Accounts

The Company URLs subtab would look like the following when logged in to a sandbox account, if the account ID was 123456_SB1.

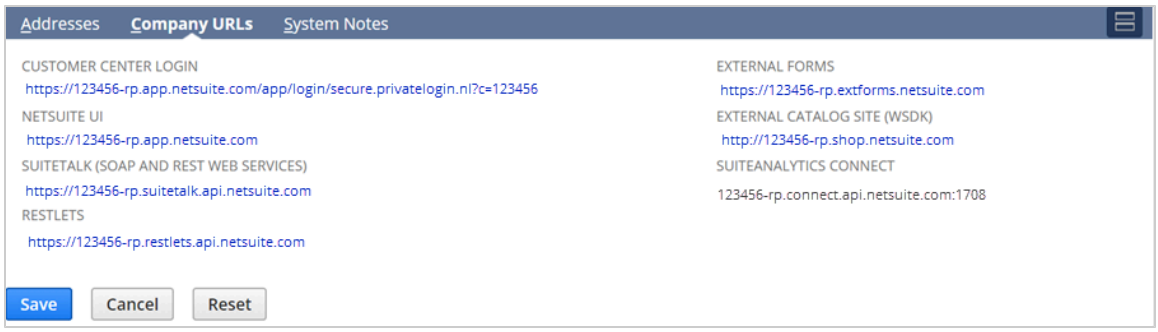
Important: The underscore in the account ID is transformed into a hyphen in the generated account-specific domain URL and the capital letters of the acronym are transformed into lowercase letters.



URLs for Release Preview Accounts

The Company URLs subtab would look like the following when logged in to a Release Preview account, if the account ID was 123456_RP.

Important: The underscore in the account ID is transformed into a hyphen in the generated account-specific domain URL and the capital letters of the acronym are transformed into lowercase letters.



URLs for Suitelets

The relative URL and the external URLs for Suitelets are shown on the Script Deployment record, when the **Available Without Login** box is checked.

The data center-specific **External URL** //forms. domain is being deprecated, to be replaced by the **External URL** <*accountID*>.extforms. account-specific domain. If you have any hard-coded references to external URLs for Suitelets using the //forms. domain, you must update these references. For access or redirection from another script to a Suitelet, the best practice is to use url.resolveScript(options) to discover the URL instead of hard-coding the URL.

Important: Do not attempt to construct an account-specific domain yourself. Each account (production, Release Preview, and sandbox) has a unique account-specific domain. The correct external URL to use is listed on the Script Deployment record.

How to Transition from Data Center-Specific Domains

You should always follow the best practice of ensuring that your NetSuite accounts and related integrations are not bound to a specific data center. As of NetSuite 2020.2, data center-specific domains for integrations are no longer supported. Do not hard-code URLs or other identifiers that specify a particular data center. Your integrations (such as SOAP web services and RESTlet clients) should use your account-specific domain for configuration or use dynamic discovery methods to obtain the correct URL.

See the following tables for guidelines for how to transition away from using data center-specific domains.

User Interface (UI) Domains

The account-specific .app. domain hosts the NetSuite UI, the NetSuite Help Center, SuiteCommerce InStore (SCIS) and parts of the Commerce Site Management Tools (SMT).

Important: Most users access the NetSuite UI with the URL https://system.netsuite.com. The browser automatically redirects users to the account-specific domain for the UI. Users with a customer center role and who are granted access to NetSuite must use your customer login (also called your private login) page.

The account-specific .extforms. domain hosts not only external (also called online) forms, but also externally available Suitelets. Externally available Suitelets are scripts that are able to run without the context of a session. Externally available Suitelets are set to Available Without Login on the script deployment page. For more information, see the help topic SuiteScript and Externally Available Suitelets.

For External (Online) Forms and External Suitelets, see Traffic Health for assistance with locating data center–specific domains in your NetSuite account.

Note: In the account-specific domain column in the following table, *<accountID>* is a variable representing your account ID. If you do not know the account ID, Administrators or other users with the Set Up Company permission can go to Setup > Company > Setup Tasks > Company Information. Click the Company URLs subtab to view the account-specific domains for this account. Production, sandbox, Release Preview, and all other NetSuite accounts each have unique account IDs.

Service	Data Center-Specific Domains	Account-Specific Domain	How to Obtain the Correct Domain	Clients
NetSuite UI	system.netsuite.com system.na0.netsuite.com system.na1.netsuite.com	The browser automatically redirects users to the account-specific .app. domain: *<accountID>*.app.netsuite.com	See the following for more information: ■ Traffic Health ■ Including URLs in Email Templates	Browsers Email clients

Service	Data Center-Specific Domains	Account-Specific Domain	How to Obtain the Correct Domain	Clients
	system.na2.netsuite.com system.na3.netsuite.com system.eu1.netsuite.com system.eu2.netsuite.com	See URLs for Account-Specific Domains for more information.		
External (Online) Forms	forms.netsuite.com forms.na0.netsuite.com forms.na1.netsuite.com forms.na2.netsuite.com forms.na3.netsuite.com forms.eu1.netsuite.com forms.eu2.netsuite.com	*<accountID>*.extforms.netsuite.com See URLs for Account-Specific Domains for more information.	See the following for more information: ■ Traffic Health ■ Including URLs in Email Templates	Browsers Custom scripts Integrations
External Suitelets	forms.netsuite.com forms.na0.netsuite.com forms.na1.netsuite.com forms.na2.netsuite.com forms.na3.netsuite.com forms.eu1.netsuite.com forms.eu2.netsuite.com	*<accountID>*.extforms.netsuite.com For more information, see: ■ URLs for Suitelets ■ Suitelet Script Deployment Page Links Subtab	See the following for more information: ■ Traffic Health ■ url.resolveScript(options)	Custom scripts Integrations

Integration Domains

- The account-specific .restlets.api. domain is used for RESTlet calls.
- The account-specific .suitetalk.api. domain is used for SOAP web services and REST web services calls.
- The account-specific .connect.api. domain hosts SuiteAnalytics Connect traffic.

To transition from data center-specific domains for integrations:

1. Evaluate whether you are using data center-specific domains in your integrations with third parties. You have two options to transition:
    a. Rather than hard-coding data center-specific URLs, use the URL that includes your account-specific domain. See URLs for Account-Specific Domains for more information.

b. Implement dynamic discovery methods to obtain the correct URL for the service you are using. See Dynamic Discovery of URLs for SOAP Web Services and RESTlet Clients for more information.

2. For RESTlets and SOAP web services, see Traffic Health for assistance with locating data center–specific domains in your NetSuite account.

Note: In the account-specific domain column in the following table, *<accountID>* is a variable representing your account ID. If you do not know the account ID, Administrators or other users with the Set Up Company permission can go to Setup > Company > Setup Tasks > Company Information. Click the Company URLs subtab to view the account-specific domains for this account. Production, sandbox, Release Preview, and all other NetSuite accounts each have unique account IDs.

Service	Data Center-Specific Domains	Account-Specific Domain	Obtain Domain Dynamically	Clients
RESTlets	rest.netsuite.com rest.na0.netsuite.com rest.na1.netsuite.com rest.na2.netsuite.com rest.na3.netsuite.com rest.eu1.netsuite.com rest.eu2.netsuite.com	*<accountID>*.restlets.api.netsuite.com See URLs for Account-Specific Domains for more information.	See the following for more information: ▪ Traffic Health ▪ DataCenterUrls REST Service ▪ Dynamic Discovery of URLs for SOAP Web Services and RESTlet Clients	Integration clients Custom scripts
SuiteTalk (SOAP and REST web services)	webservices.netsuite.com webservices.na0.netsuite.com webservices.na1.netsuite.com webservices.na2.netsuite.com webservices.na3.netsuite.com webservices.eu1.netsuite.com webservices.eu2.netsuite.com	*<accountID>*.suitetalk.api.netsuite.com See URLs for Account-Specific Domains for more information.	See the following for more information: ▪ Traffic Health ▪ getDataCenterUrls ▪ Dynamic Discovery of URLs for SOAP Web Services and RESTlet Clients	HTTP integration clients (for example, Axis)
SuiteAnalytics Connect	odbcserver.netsuite.com odbcserver.na0.netsuite.com odbcserver.na1.netsuite.com odbcserver.na2.netsuite.com	*<accountID>*.connect.api.netsuite.com See URLs for Account-Specific Domains for more information.	For more information, see the following topics: ▪ Accessing the Connect Service Using an ODBC Driver. ▪ Accessing the Connect Service Using a JDBC Driver.	ODBC clients JDBC clients ADO.net clients

Service	Data Center-Specific Domains	Account-Specific Domain	Obtain Domain Dynamically	Clients
	odbcserver.na3.netsuite.com odbcserver.eu1.netsuite.com odbcserver.eu2.netsuite.com		▪ Accessing the Connect Service Using an ADO.NET Data Provider.	

Commerce Domains

The account-specific .shop. domain hosts WSDK endpoints for integration with third-party webstores with NetSuite shopping cart and checkout features.

The account-specific .secure. domain serves as the origin endpoint for the secure (https://) domains for Commerce.

Note: In the account-specific domain column in the following table, <*accountID*> is a variable representing your account ID. If you do not know the account ID, Administrators or other users with the Set Up Company permission can go to Setup > Company > Setup Tasks > Company Information. Click the Company URLs subtab to view the account-specific domains for this account. Production, sandbox, Release Preview, and all other NetSuite accounts each have unique account IDs.

Service	Data Center-Specific Domains	Account-Specific Domain	Clients
External Catalog Sites (WSDK)	shopping.netsuite.com shopping.na0.netsuite.com shopping.na1.netsuite.com shopping.na2.netsuite.com shopping.na3.netsuite.com shopping.eu1.netsuite.com shopping.eu2.netsuite.com	<*accountID*>.shop.netsuite.com See URLs for Account-Specific Domains for more information.	Browsers
Secure Checkout	checkout.netsuite.com checkout.na0.netsuite.com checkout.na1.netsuite.com checkout.na2.netsuite.com checkout.na3.netsuite.com checkout.eu1.netsuite.com checkout.eu2.netsuite.com	<*accountID*>.secure.netsuite.com	Browsers

Email Domains

The account-specific .email. domain is the main entry point for inbound email sent to NetSuite. Use cases include Email Case Capture and Email Capture Plugin.

Note: In the account-specific domain column in the following table, *<accountID>* is a variable representing your account ID. If you do not know the account ID, Administrators or other users with the Set Up Company permission can go to Setup > Company > Setup Tasks > Company Information. Click the Company URLs subtab to view the account-specific domains for this account. Production, sandbox, Release Preview, and all other NetSuite accounts each have unique account IDs.

Service	Data Center-Specific Domains	Account-Specific Domain	How to Find the URL	Clients
Email Case Capture	cases.netsuite.com cases.na0.netsuite.com cases.na1.netsuite.com cases.na2.netsuite.com cases.na3.netsuite.com cases.eu1.netsuite.com cases.eu2.netsuite.com	*<accountID>*.email.netsuite.com	See the help topic Using Email Case Capture.	Email clients (examples include Microsoft Outlook and Mozilla Thunderbird)
Email Capture Plugin	email.netsuite.com email.na0.netsuite.com email.na1.netsuite.com email.na2.netsuite.com email.na3.netsuite.com email.eu1.netsuite.com email.eu2.netsuite.com	*<accountID>*.email.netsuite.com	See the help topic Create an Email Alias and Set Up Forwarding	Email clients (examples include Microsoft Outlook and Mozilla Thunderbird)

DataCenterUrls REST Service

The DataCenterUrls REST service lets you obtain the correct URL for external client application access to NetSuite. When you build an integration between NetSuite and an external client application, you must incorporate logic that can determine the correct URL for the appropriate NetSuite account.

For details about dynamic discovery of URLs, see Dynamic Discovery of URLs for SOAP Web Services and RESTlet Clients.

Usage Notes

The DataCenterUrls REST service does not require authentication. This makes it ideal for integrations that use token-based authentication.

When you submit your request, you must provide your account ID as an input parameter so that the information returned will be specific to your account.

You can use the DataCenterUrls REST service to discover account-specific domains for the following :

- SOAP web services: https://<accountID>.suitetalk.api.netsuite.com
- RESTlets: https://<accountID>.restlets.api.netsuite.com
- System domain (for the NetSuite application): https://<accountID>.app.netsuite.com

These account-specific domains are unique to your account. The URLs do not contain a data center-specific indentifier, they contain your account ID instead. For more information, see URLs for Account-Specific Domains.

You can send a request for your production, sandbox, and Release Preview accounts. Ensure that you include the appropriate account ID in the request. The format is `https://rest.netsuite.com/rest/datacenterurls?account=` *<accountID>*, where *<accountID>* is a variable representing the account ID.

Sample REST DataCenterUrls Request and Response

In the following examples, the account ID, or c parameter, is 123456. Send your HTTP GET request in the following format: https://rest.netsuite.com/rest/datacenterurls?account=123456

Important: If you receive a **Service Unavailable** error message, try sending the request in the following format: https://rest.netsuite.com/rest/datacenterurls?account=123456&c=123456. Including the c parameter in your request ensures that your request is routed correctly according to your version and that you receive the correct response.

The following is an example of the complete text of the Service Unavailable error message:

Service Unavailable

No service is available at this URL. If you expect this service to be available for your account, ensure your account number appears in the URL as request parameter “c”.

Example: https://webservices.netsuite.com/services/NetSuitePort_X_X/c=123456

This service does not require an authorization or a content-type header.

When sending a correctly formed request, the response is returned in one of the following formats. The returned information should not be parsed to retrieve any additional information.

Examples of Returned Information

Environments where account-specific domains are used:

```
{
"restDomain": https://<accountID>.restlets.api.netsuite.com
"webservicesDomain": https://<accountID>.suitetalk.api.netsuite.com
"systemDomain": https://<accountID>.app.netsuite.com
}
```

The full request and response can look as follows.

Request:

```
GET /rest/datacenterurls?account=123456 HTTP/1.1
Host: <host>
```

Response:

```
HTTP/1.1 200 OK
Date: Thu, 22 Jun 2017 05:48:56 GMT
Content-Length: 179
Content-Type: application/json

{"webservicesDomain":"https://<accountID>.suitetalk.api.netsuite.com","restDomain":"https://<accountID>.restlets.api.netsuit
e.com","systemDomain":"https://<accountID>.app.netsuite.com"}
```

REST DataCenterUrls Errors

If you send a GET request that contains a nonexistent account ID, you receive the default NetSuite domains in the response.

```
{
"restDomain": "https://rest.netsuite.com",
"webservicesDomain": "https://webservices.netsuite.com",
"systemDomain": "https://system.netsuite.com"
}
```

Additionally, you may receive the following errors.

Error	Description
USER_ERROR: You need to provide a proper value for the required field: account.	This error is returned if you send a GET request that does not include the account ID input parameter.
USER_ERROR: Company ID is invalid	This error is returned if the account ID in the request contains an invalid character, such as a space or a percent sign.
HTTP Error 405 - Method Not Allowed	The DataCenterUrls service accepts only the HTTP GET method. This error is returned if the request contains an unsupported HTTP method.

The REST Roles Service

NetSuite provides a REST service called roles, which you can use to retrieve the following information:

- A list of roles that a user belongs to.
- The correct domains for external client access to a NetSuite account. In an integration, domains must be discovered dynamically, because they can change without notice.
- The account type of the returned account (for example, production, release preview, or sandbox).

Note: As of 2020.1, when you call the REST roles service on an account specific domain, only the account specific information is returned. All roles are returned for the user, including the Customer Center roles, and any roles created based on the Customer Center role.

Note: RESTlets are part of SuiteScript. They are **not** part of NetSuite's web services feature. Be aware that if a role has the Web Services Only option set to true, a user logged in through that role is permitted to send web services calls only. RESTlet calls receive an INVALID_LOGIN_CREDENTIALS error response.

You call the roles service by sending a request to one of the roles service URLs, as described in URLs for Accessing the REST roles Service. The request must use the GET method, and it must also include an NLAuth authorization header. For details, see Authentication for the REST roles Service. If you need to retrieve Customer Center roles, note that you must include a NetSuite account ID in the authorization header.

In response, the service returns data about roles and domains. For examples, see Sample Responses from the roles Service.

Note: Using the REST roles service is not an authentication method. Accessing the REST roles service is not considered as a login. This service only returns the list of roles for a user, but does not log the user in.

For specific details on domain data returned by the roles service, see Domain Data Returned by the roles Service.

For information about NLAuth, see the help topic Using User Credentials for RESTlet Authentication.

Account-specific domains are supported for RESTlets. Account-specific domains contain the account ID as part of the domain name. An account-specific domain is not dependent on the data center where the account is hosted. The domain does not change, even if the account is moved to a different data center. Your account-specific domain for RESTlets is shown on the Company Information page on the Company URLs subtab. For more information, see URLs for Account-Specific Domains. You should be using your account-specific domain for RESTlets. See How to Transition from Data Center-Specific Domains. Currently, HTTP GET requests using obsolete data center-specific domains are redirected, but this redirection is temporary and may end at any time.

Important: If you have an integration that makes requests to the production version of the roles service, and these requests are specific to a NetSuite account, your integration must include logic for handling redirection. This logic is necessary because of how the system handles requests specific to a NetSuite account. NetSuite redirects these calls to the instance of the service specific to the data center that hosts the account. For this reason, your integration must include logic for handling the 302 Found response status code, which is the code used when redirection occurs. By contrast, if your authorization header omits a NetSuite account ID, the request is handled without redirection.

Authentication for the REST roles Service

Each call to the REST roles service must include an NLAuth authorization header. This header must identify a user and the user's password. Additionally, if you need to retrieve data about Customer Center roles, the account ID **must** be included in the header. Otherwise, the account ID is optional.

Note the following:

- If your request includes a NetSuite account ID, the information returned is specific to that account. All roles are returned for the user, including the Customer Center roles, and any roles created based on the Customer Center role.
- If your request omits a NetSuite account ID, the system returns details for every NetSuite account to which the user identified in the header has access. All roles except Customer Center roles are included.

Note: As of 2020.1, when you call the REST roles service on an account specific domain, only the account specific information is returned. All roles are returned for the user, including the Customer Center roles, and any roles created based on the Customer Center role.

For examples, see Sample Responses from the roles Service.

For details on domain data returned by the roles service, see Domain Data Returned by the roles Service.

For information about constructing an NLAuth authorization header, see the help topic Using User Credentials for RESTlet Authentication.

URLs for Accessing the REST roles Service

To use the roles service, you send a GET request to the appropriate URL. However, the URL that you use can vary in the following ways:

- You use a different URL for each of the following: production, sandbox, and Release Preview accounts. For details, see Sample URLs.
- In some cases, your request may be redirected. If you have an integration that calls the roles service, your integration must include logic to handle this redirection. For details, see Calls that May Require Redirection.

Sample URLs

You can use the following URL to call the roles service, using the GET method. This URL works for production, sandbox, and release preview accounts: https://rest.netsuite.com/rest/roles and similar variants.

Note: NetSuite maintains multiple URLs for the production version of the roles service. Each data center hosts the service on the REST domain specific to that data center. However, you are not expected to know the data center of your account when you send the request. For that reason, you can use any production URL. But be aware that, in some cases, your request may be directed to a different URL, as described in the next section. For a list of all REST service domains, see Understanding NetSuite URLs.

Note: Account-specific domains are supported for RESTlets, and you can access your RESTlet domain at the following URL, where 123456 is your account ID: 123456.restlets.api.netsuite.com. For more information, see URLs for Account-Specific Domains.

As of 2020.1, when you call the REST roles service on an account specific domain, only the account specific information is returned. All roles are returned for the user, including the Customer Center roles, and any roles created based on the Customer Center role.

Calls that May Require Redirection

Sometimes calls to the roles service include a NetSuite account ID in the authorization header. If you send this type of request to a production version of the roles service, the call may be redirected to a different URL. Redirection can occur because these requests must be handled by the same data center that hosts the NetSuite account. For this reason, if you have an integration that makes this type of call, the integration must include logic to handle redirection.

For example, suppose you are calling the service to retrieve roles information for a user in your NetSuite account. You may not know which data center your account is hosted in, especially if you have never called the roles service before. This knowledge gap is expected. The service is designed so that you can send your request to any of the available production URLs for the service. However, if your account is hosted in the EU and you send the request to a URL associated with a North American data center, your request will be redirected to https://rest.eu2.netsuite.com. For this reason, your integration must include logic for handling the 302 Found response status code, which is the code used when redirection occurs.

By contract, if your authorization header omits a NetSuite account ID, your request is handled without redirection.

Domain Data Returned by the roles Service

The REST roles service lets you dynamically discover the following types of domains for any NetSuite account.

Type of Domain	Examples
RESTlet	https://<accountID>.restlets.netsuite.com
System	https://<accountID>.app.netsuite.com
Web services	https://<accountID>.suitetalk.api.netsuite.com

It is important to dynamically discover these domains because, for any NetSuite account, these domains can change. They can change because NetSuite hosts data in multiple data centers, and the location of your account data can change. Therefore, any integration that includes full URLs **must** include logic for dynamically discovering these domains. A hard-coded URL could fail.

Note: Account-specific domains are supported for RESTlets, and you can access your RESTlet domain at the following URL, where 123456 is your account ID: 123456.restlets.api.netsuite.com. For more information, see URLs for Account-Specific Domains.

As of 2020.1, when you call the REST roles service on an account specific domain, only the account specific information is returned. All roles are returned for the user, including the Customer Center roles, and any roles created based on the Customer Center role.

Sample Responses from the roles Service

The following sections show sample responses from the REST roles service:

- Calls that Include a NetSuite Account ID
- Calls that Omit a NetSuite Account ID

Calls that Include a NetSuite Account ID

A typical call to the roles service includes a NetSuite account ID in its authorization header. For example, the header might look like the following:

```
NLAuth nlauth_account=023456, nlauth_email=jsmith@example.com, nlauth_signature=Welcome123
```

In response, the system returns data specific to that NetSuite account and user, as shown in the following example.

```
  {
"account": {
"internalId": "1234567",
"name": "Test Acct",
"type": "PRODUCTION"
},
"role": {
"internalId": 14,
"name": "Customer Center"
},
"dataCenterURLs": {
"webservicesDomain": "https://<accountID>.suitetalk.api.netsuite.com",
"restDomain": "https://<accountID>.restlets.api.netsuite.com",
"systemDomain": "https://<accountID>.app.netsuite.com"
}
}
],
```

With this approach, the system returns **all** roles for the user in the specified account. Results include the Customer Center role and any custom roles created based on the Customer Center role, if the user belongs to those roles. If the account ID is omitted, the service does not return Customer Center roles.

Note: For information about NLAuth, see the help topic Using User Credentials for RESTlet Authentication.

Calls that Omit a NetSuite Account ID

A call to the roles service can omit a NetSuite account ID. With these calls, the authorization header includes only user and password data, as follows:

```
NLAuth nlauth_email=jsmith@example.com, nlauth_signature=Welcome123
```

With this type of call, the system returns data on all accounts to which the user has access. However, the system does not return the Customer Center role, nor any custom role that was created based on the Customer Center role. To have the system return Customer Center roles, use the method described in Calls that Include a NetSuite Account ID.

The following snippet shows a sample response to a request that omitted a NetSuite account ID.

```
[
 {
  "account": {
   "internalId": "023456"
   "name": "Account 1"
  }
  "role": {
   "internalId": 3
   "name": "Administrator"
  }
  "dataCenterURLs": {
      "webservicesDomain": "https://<accountID>.suitetalk.api.netsuite.com",
      "restDomain": "https://<accountID>.restlets.api.netsuite.com",
      "systemDomain": "https://<accountID>.app.netsuite.com"
   }
  },

  {
  "account": {
   "internalId": "123456"
   "name": "Account 2"
  }
  "role": {
   "internalId": 1
   "name": "Accountant"
  }
  "dataCenterURLs": {
   "webservicesDomain": "https://<accountID>.suitetalk.api.netsuite.com",
      "restDomain": "https://<accountID>.restlets.api.netsuite.com",
      "systemDomain": "https://<accountID>.app.netsuite.com"
   }
  },

  {
  "account": {
   "internalId": "123456"
   "name": "Account 2"
  }
  "role": {
   "internalId": 3
   "name": "Administrator"
  }
  "dataCenterURLs": {
   "webservicesDomain": "https://<accountID>.suitetalk.api.netsuite.com",
      "restDomain": "https://<accountID>.restlets.api.netsuite.com",
      "systemDomain": "https://<accountID>.app.netsuite.com"
  }
 }

]
```

Important: Strings must be escaped using RFC 3986. If you do not escape characters in the header, you may receive an INVALID_LOGIN_ATTEMPT error. For more information about percent encoding, go to https://tools.ietf.org/html/rfc5849#section-3.6.