# Understanding Notification Variables in Nagios XI

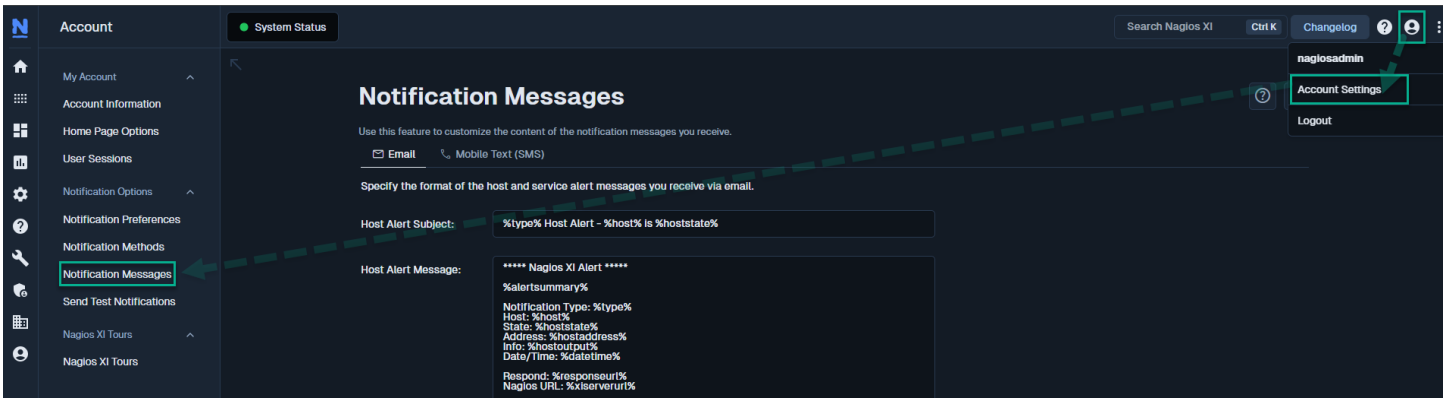
## Purpose

This document describes the variables available for use when customizing Nagios XI notification messages. Understanding the different notification variables available will allow users greater ability to customize the format and content of host and service notification messages they receive. This document also describes how to create new variables which allow you to even further customize your Nagios XI notifications.

This document is intended for use by both Nagios XI Administrators and Users who want to customize the notification messages they receive from Nagios XI.

## Customizing Notification Messages

Each Nagios XI user can customize the format and content of host and service notification messages they receive. Notification messages can be customized by accessing the user's preferences section. Click on the username in the upper right corner of the XI navigation bar and navigate to **Account Settings > Notification Options > Notification Messages.**




A notification message may contain one or more variables that are substituted with current or static information about a host or service before the alert message is sent.

In the screenshot above you can see an **Email** tab and a **Mobile Text (SMS)** tab. Both tabs are configured the same way, however with Mobile Text (SMS) messages are usually sent with as minimal information as possible, as some carriers can limit the amount of characters that can be included in a text message. Please refer to the Setup SMS Alerts In Nagios XI documentation for more information on this topic.

## Variable Types

There are three types of variables that can be used in notification messages:

- General notification variables
- Host notification variables
- Service notification variables

## General Notification Variables

The following variables can be used in both host and service alert notification messages.

| Variable | Description |
|---|---|
| %contact% | The short name of the Nagios Core contact the notification is being sent to. This is the same as the Nagios XI user's login name. |
| %contactemail% | The email address of the Nagios Core contact the notification is being sent. This is the same as the Nagios XI user's email address. |
| %datetime% | The current date and time, formatted according to the user's date format preference. |
| %type% | A string indicating the type of notification that is being sent out. Valid values and their meanings are:<br>PROBLEM - The host or service problem is in a problem state<br>RECOVERY - The host or service has just recovered<br>FLAPPINGSTART - The host or service has started flapping<br>FLAPPINGSTOP - The host or service has stopped flapping<br>FLAPPINGDISABLED - Flap detection has been disabled for the host or service<br>DOWNTIMESTART - The host or service has entered a period of scheduled downtime<br>DOWNTIMEEND - The host or service has left a period of scheduled downtime<br>DOWNTIMECANCELLED - The active scheduled downtime for the host or service has been canceled<br>ACKNOWLEDGEMENT - The host or service problem has been acknowledged |

| Variable | Description |
|---|---|
| %xiserverurl% | The URL to the Nagios XI server, as defined by the administrator. |
| %responseurl% | A rapid response URL that can be used to quickly handle problems through acknowledgments, etc. |
| %objecttype% | The type of object this notification is about. Will be either HOST or SERVICE for host and service notifications, respectively. |
| %objectid% | A unique id associated with the host or service. |
| %author% | The name of the author of an acknowledgment. Only present if %type% macro is ACKNOWLEDGEMENT |
| %comments% | The comment made by the author of an acknowledgment. Only present if %type% macro is ACKNOWLEDGEMENT |
| %alertsummary% | A summary of the alert. Due to the length of the summary text, it is recommended that this macro only be used in email notifications. |

## Host Notification Variables

The following host variables can be used in host alert notification messages.

| Variable | Description |
|---|---|
| %currentattempt% | A number indicating the current check attempt for the host. Valid values range from one (1) up to %maxattempts% |
| %host% | The host name. |
| %hostaddress% | The address of the host. Usually an IP address or FQDN. |
| %hostalias% | An alias for the host. Usually the same as %host%. |
| %hosteventid% | A unique id number for the current host event. |
| %hostoutput% | The text output from the last check of the host. |
| %longhostoutput% | The full text output (aside from the first line) from the last host check. |
| %hostproblemid% | A unique id number for the current host problem. |

| Variable | Description |
|---|---|
| %hoststate% | A string indicating the current state of the host. Valid values are: UP, DOWN, or UNREACHABLE. |
| %hoststateid% | A number indicating the current state of the host. Valid values and their string equivalents are: 0 = UP, 1 = DOWN, 2 = UNREACHABLE. |
| %hoststatetype% | A string indicating the current state type for the host. Valid values are SOFT and HARD. This value is almost always HARD for problem and recovery notifications. SOFT state occurs when a host enters or recovers from a non-UP state before being re-checked %maxattempts% times. |
| %lasthoststate% | A string indicating the last state of the host. Values are the same as for the %hoststate% variable. |
| %lasthoststateid% | A number indicating the last state of the host. Values are the same as for the %hoststateid% variable. |
| %maxattempts% | A number indicating the maximum number of check attempts that will be made before the host is considered to be in a HARD non-UP state. |

## Service Notification Variables

The following service variables can be used in service alert notification messages.

| Variable | Description |
|---|---|
| %currentattempt% | A number indicating the current check attempt for the service. Valid values range from one (1) up to %maxattempts% |
| %service% | The service name. |
| %serviceeventid% | A unique id number for the current service event. |
| %serviceoutput% | The text output from the last check of the service. |
| %longserviceoutput% | The full text output (aside from the first line) from the last service check. |
| %serviceproblemid% | A unique id number for the current service problem. |
| %servicestate% | A string indicating the current state of the service. Valid values are:<br>OK, WARNING, CRITICAL and UNKNOWN. |

| | |
|---|---|
| %servicestateid% | A number indicating the current state of the service. Valid values and their string equivalents are:<br>0 = OK<br>1 = WARNING<br>2 = CRITICAL<br>3 = UNKNOWN |
| %servicestatetype% | A string indicating the current state type for the service. Valid values are SOFT and HARD. This value is almost always HARD for problem and recovery notifications. SOFT state occurs when a service enters or recovers from a non-OK state before being re-checked %maxattempts% times. |
| %lastservicestate% | A string indicating the last state of the service. Values are the same as for the %servicestate% variable. |
| %lastservicestateid% | A number indicating the last state of the service. Values are the same as for the %servicestateid% variable. |
| %maxattempts% | A number indicating the maximum number of check attempts that will be made before the service is considered to be in a HARD non-OK state. |

Service notifications can also contain some host notification variables. When used, these variables refer to the host that is associated with the service. Valid host notification variables that can be used in service notifications are listed below.

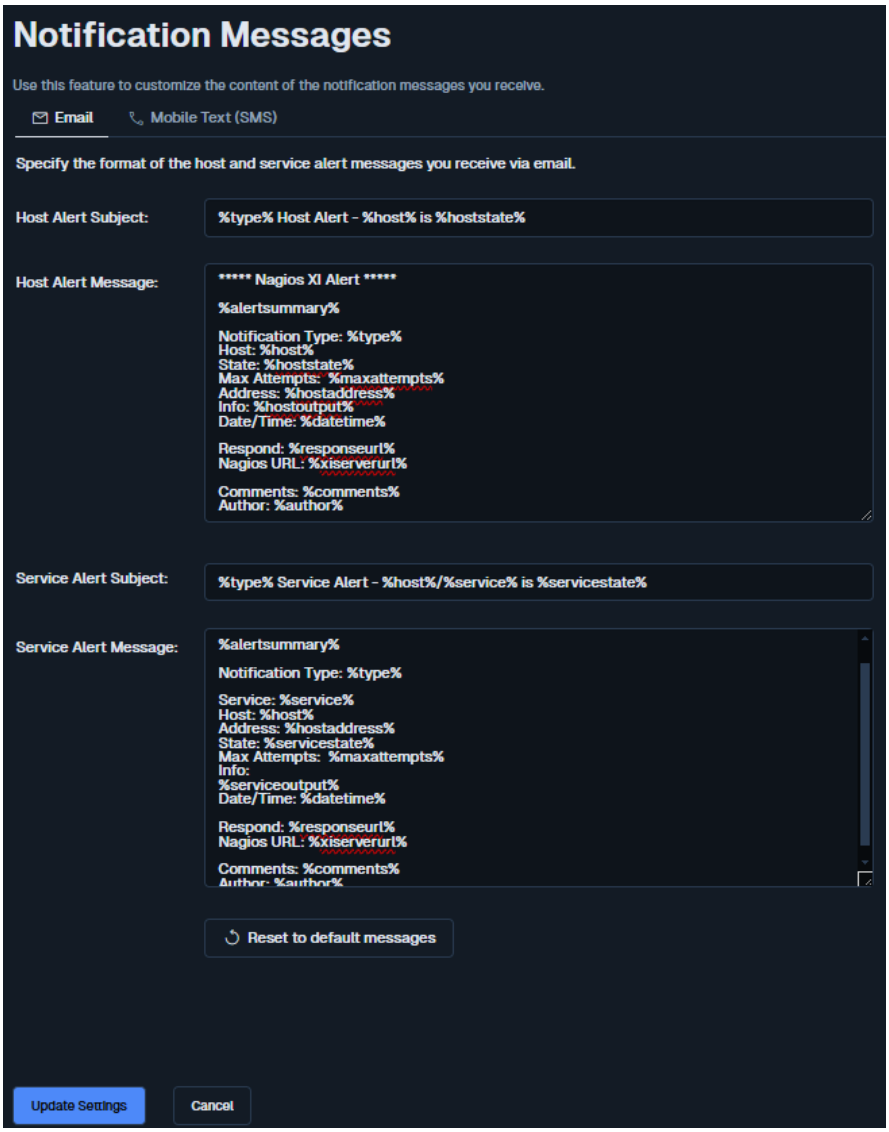
| Variable |
|---|
| %host% |
| %hostaddress% |
| %hostalias% |
| %hoststate% |
| %hoststateid% |

## Example Custom Notification Message

Here is an example of customizing the notification message using the variables above.

Here you can see that the following variables have been added:

- %maxattempts%
- %comments%
- %author%



## Using Custom Host Macros in Notifications

Custom macros (or variables) are used in Nagios XI objects to extend the capabilities of your monitoring definitions. One example is where you may require the MAC address of the network card to be stored in the host object. These variables stored in the objects can also be used in the notification messages.

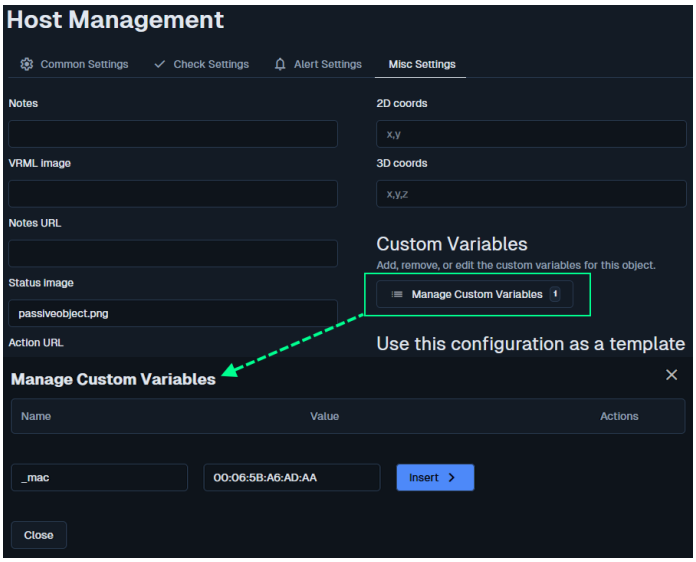
There are a few important things that you should note about custom variables:

- Custom variable names must begin with an underscore (_) to prevent name collision with standard variables
- Custom variable names are case-insensitive
- Custom variables are inherited from object templates like normal variables
- Scripts can reference custom variable values with macros and environment variables

### Create Host Definition Variable

In the following example we'll add a `_mac` variable to host object with the value = `00:06:5B:A6:AD:AA`.

1. Navigate to **Configure > Core Config Manager > Monitoring > Hosts**.
2. Click the required host to edit it.
3. Click the **Misc Settings** tab.
4. Click **Manage custom variables**.
5. Populate the **Name** and **Value** fields.
6. Click **Insert** to add the variable and then click **Close**.
7. **Save** the Host object and then **Apply Configuration**.



## Passing Host Variables To Notification Messages

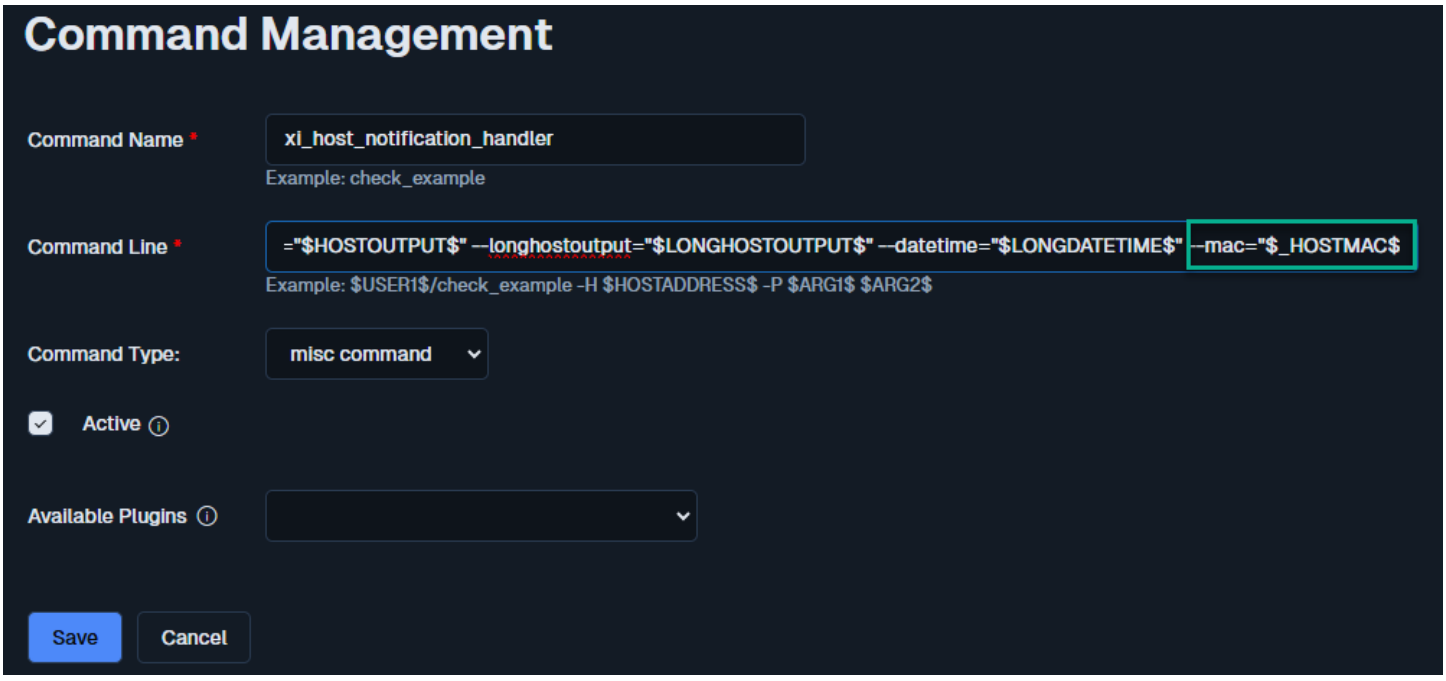
For the example above, you defined a custom variable with a variable name = `_mac` and value = `00:06:5B:A6:AD:AA`.

Any HOST macro is referenced using `$_HOSTVARIABLE$`, for example `$_HOSTMAC$`. You can see that the underscore needs to be before the word HOST and the variable name follows immediately after. Another example: `_DRAC_ADDRESS` would be `$_HOSTDRAC_ADDRESS$`.

`$_HOSTMAC$` will be used in the following command definition to pass the macro variable to the notification message.

FYI, if the variable name was entered in lower case, it is changed to upper case when it is applied to the running configuration so enter them all in upper case. Example, `_mac` must be entered like `$_HOSTMAC`.

1. Navigate to **Configure > Core Config Manager > Commands**.
2. Edit the **xi_host_notification_handler** command by clicking on it.




3. Edit the **Command Line** value and append it with --mac="$_HOSTMAC$".

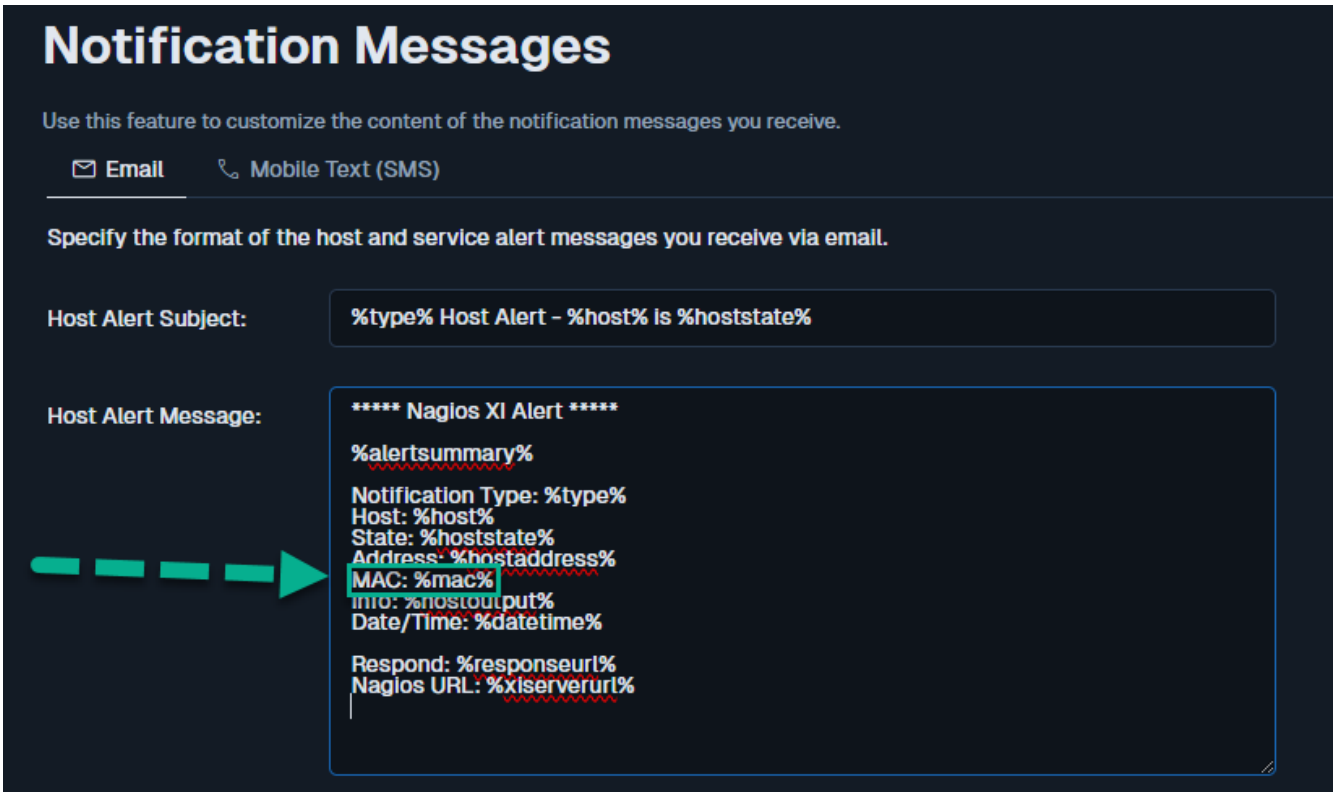
   The `--mac` argument is how the value will be referenced in the notification messages as `%mac%`. The names don't need to match up, it can be something completely different like `--bananas="$_HOSTMAC$"` and the value will be referenced in the notification messages as `%bananas%`.

Similarly, if you created a different variable `_DRAC_ADDRESS` you would append the **xi_host_notification_handler** command with: `--DRAC_ADDRESS="$_HOSTDRAC_ADDRESS$"`

You can append the **xi_host_notification_handler** command with as many host variables you create.

4. **Save** the command and then **Apply Configuration**.
5. The last step is to log in to Nagios XI as the user who wants to customize their messages.

   Click on the username in the upper right corner of the XI navigation bar and navigate to **Account Settings > Notification Options > Notification Messages**
6. Add the text `MAC: %mac%` to your **Host Alert Message** section.




7. Click **Update Settings** when you are finished making changes.
8. Notification messages will now include the new `_MAC` variable.

**NOTE:** All of your host objects will need to be updated to have their own `_MAC` variable otherwise the notification message will not have a value for `%mac%`.

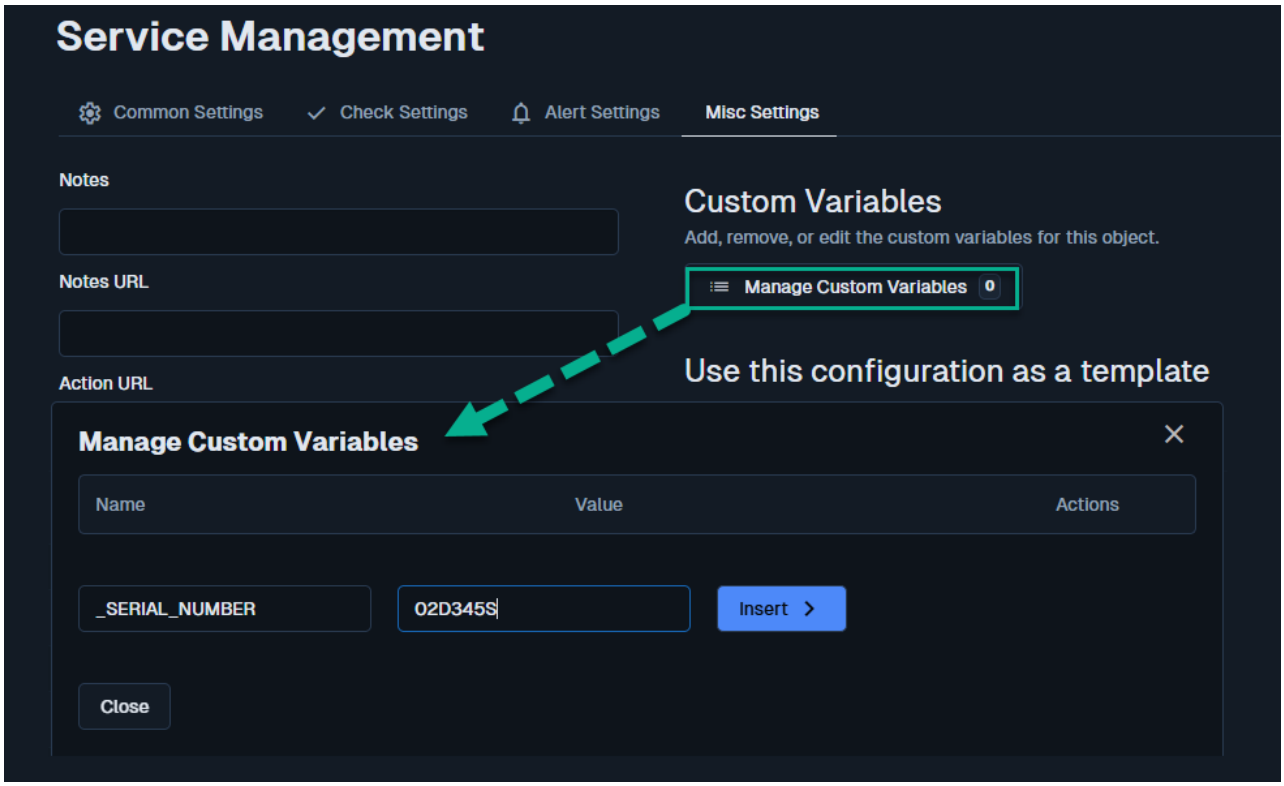
## Using Custom Service Macros In Notifications

To define a service definition macro, the procedure is very similar. One thing that is different is that the custom variable must be defined in the service definition, instead of the host definition.

### Create Service Definition Variable

In the following example we'll add a `_SERIAL_NUMBER` variable to host object with the value = `02D345S`.

1. Navigate to **Configure > Core Config Manager > Monitoring > Services**.
2. Click the required service to edit it.
3. Click the **Misc Settings** tab.
4. Click **Manage custom variables**.




5. Populate the **Name** and **Value** fields.
6. Click **Insert** to add the variable and then click **Close**.
7. **Save** the service object and then **Apply Configuration**.

## Passing Service Variables to Notification Messages

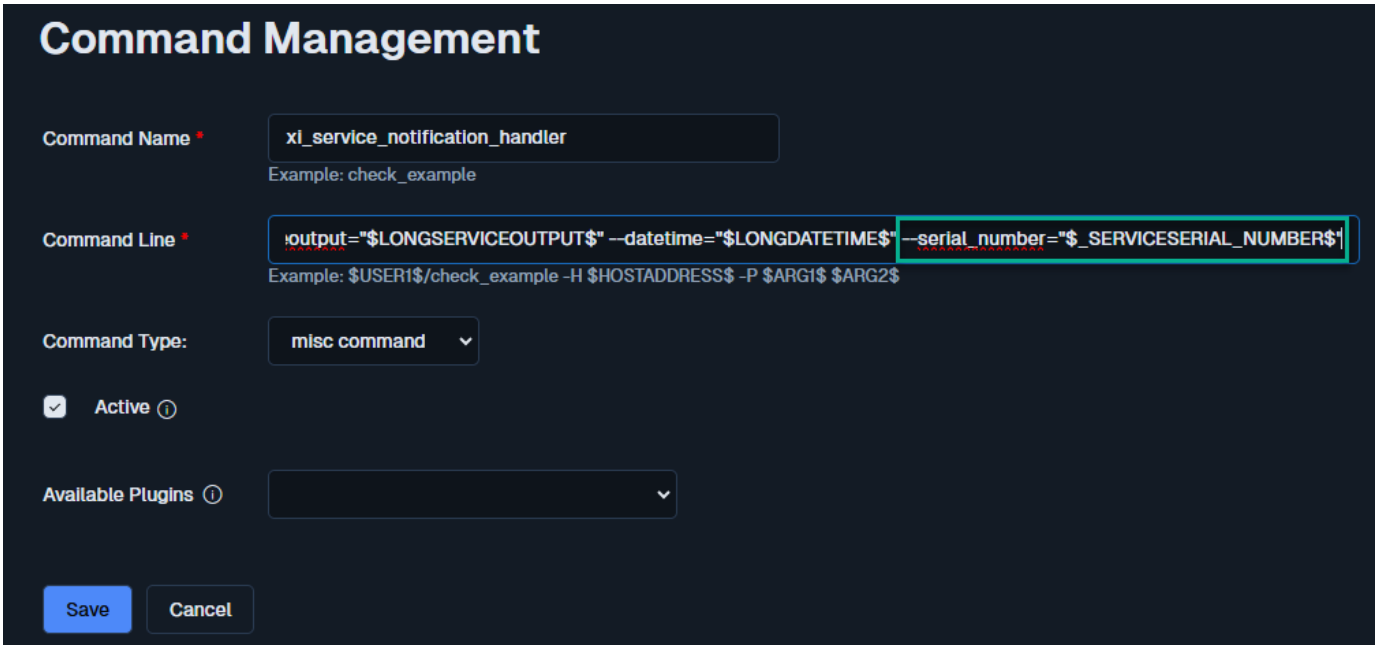
For the example above, you defined a custom variable with a variable name = `_SERIAL_NUMBER` and value = `02D345S`.

Any SERVICE macro is referenced using `$_SERVICEVARIABLE$`, for example `$_SERVICESERIAL_NUMBER$`. You can see that the underscore needs to be before the word SERVICE and the variable name follows immediately after.

`$_SERVICESERIAL_NUMBER$` will be used in the following command definition to pass the macro variable to the notification message.

FYI, if the variable name was entered in lower case, it is changed to upper case when it is applied to the running configuration so enter them all in upper case. Example, `_variable` must be entered like `$_SERVICEVARIABLE`.

1. Navigate to **Configure > Core Config Manager > Commands**.
2. Edit the **xi_service_notification_handler** command by clicking on it.



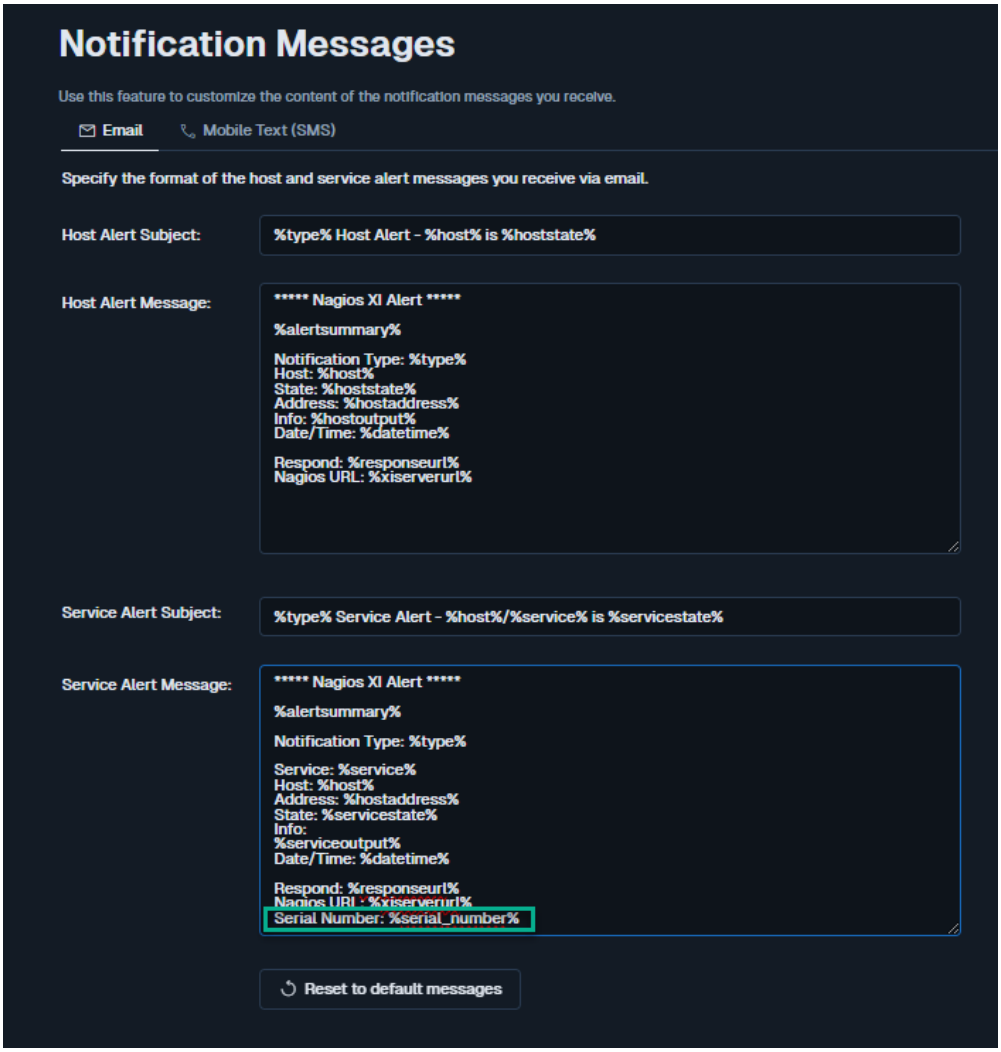

3. Edit the **Command Line** value and append it with `--serial_number="$_SERVICESERIAL_NUMBER$"`

   The `--serial_number` argument is how the value will be referenced in the notification messages as %serial_number%.

   You can append the **xi_service_notification_handler** command with as many host variables you create.

4. **Save** the command and then **Apply Configuration**.
5. The last step is to log in to Nagios XI as the user who wants to customize their messages.

   Click on the username in the upper right corner of the XI navigation bar and navigate to **Account Settings > Notification Options > Notification Messages**
6. Add the text `MAC: %serial_number%` to your **Service Alert Message** section.




7. Click **Update Settings** when you are finished making changes.
8. Notification messages will now include the new `_SERIAL_NUMBER` variable.

**NOTE:** All of your service objects will need to be updated to have their own `_SERIAL_NUMBER` variable otherwise the notification message will not have a value for `%serial_number%`.

## Response URL

The `%responseurl%` variable provides a rapid response URL that can be used to quickly handle problems through acknowledgments. The default URL provided in Nagios XI can be used by anyone without requiring them to login to Nagios XI. In certain environments this can be a security risk. There is a configuration option in Nagios XI that changes the response URL generated.

Establish a terminal session to your Nagios XI server as the root user. Edit the file `config.inc.php` by executing the following command:

```
vi /usr/local/nagiosxi/html/config.inc.php
```

**NOTE:** When using the vi editor, to make changes press `i` on the keyboard first to enter insert mode. Press **Esc** to exit insert mode.

Find the line:

```
// $cfg['secure_response_url']=1;
```

Change the line by removing the // as follows:

```
$cfg['secure_response_url']=1;
```

When you have finished, save the changes in vi by typing:

```
:wq
```

and press **Enter**.

Now when notifications are sent a different response URL will be generated that will require the user to log in to Nagios XI. The user will be directed to the **Status Details** page of the **host** or **service** where you can perform any actions or review the object.

## Notification Settings Management

As explained earlier, each user can define their own notification settings. If you wish to deploy the same notification settings to all users, you can use the **Notification Management** tool to complete this task. Please refer to the following documentation which explains this in more detail:

https://assets.nagios.com/downloads/nagiosxi/docs/Configuring-Email-And-Text-Notifications-in-Nagios-XI.pdf

## Finishing Up

This completes the documentation on understanding notification variables in Nagios XI. If you have additional questions or other support-related questions, please visit us at our Nagios Support Forum, Nagios Knowledge Base, or Nagios Library:

Visit Nagios Support Forum  Visit Nagios Knowledge Base  Visit Nagios Library