



Docusnap - Defining Notifications

E-mail Reminders

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1. Introduction

Docusnap provides the ability to send notifications about events automatically via email. This document describes how to create a message definition and subsequently a notification in Docusnap.

The message definition uses SQL statements to define the event for which a notification should be sent. The notification task executes the message definition and sends an email when the event occurs.

To use email messaging, the Docusnap server must be configured, and an email server must be available. More information about this can be found in the Docusnap user manual or in the **HowTo Installation and Configuration**.

It also describes how you can use message definitions for regular maintenance tasks. For example, you can use a maintenance task to periodically populate the virtualization host field of the inventoried systems.

2. Basics

The message definitions are SQL queries. The message definition defines the event for which you want to be notified by e-mail. E.g., that a license or maintenance contract has expired, that a certain software has been found during inventory, etc.

For a message definition (the actual SQL statement) to be executed, a notification task is required. This notification task executes the SQL statement on the database and in case of a result, an email is sent with this result in an Excel list.

The important thing here is that Docusnap saves the last result. If a change is detected within the result during the next execution, a new email is sent. If there is no change, no new e-mail will be sent!

Furthermore, it should be noted that the Excel file receives the name of the scheduled notification task. Please use only characters that are allowed in a file name.

3. Notification definitions

3.1 Accessing the notification definition

The wizard for the notification definition can be opened from Navigation – Administration - General.

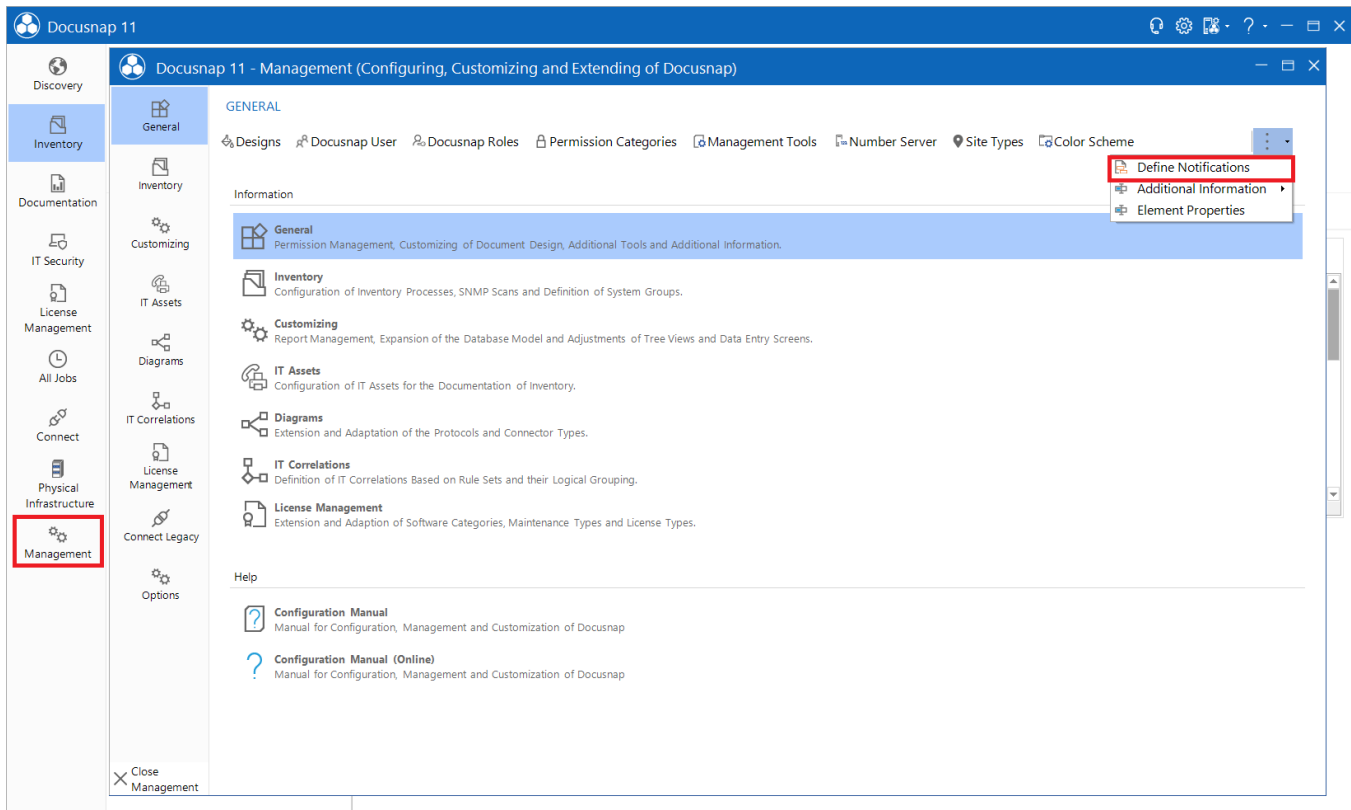


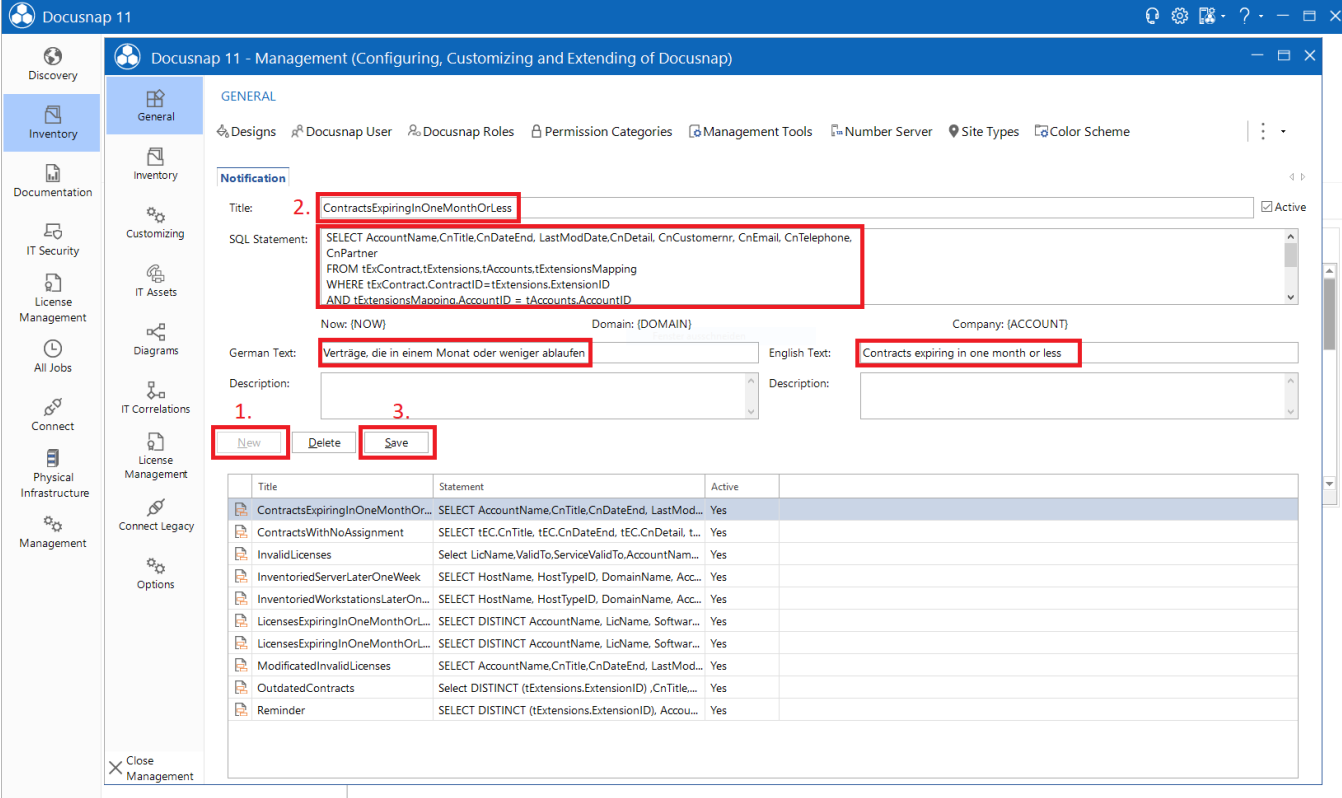
Fig. 1 - Accessing the notification definition

The following dialog can be used to create new notification definitions and to edit existing definitions.

Step 1: Select New.

Step 2: Enter a name, the SQL query and a text in English and German. So both fields need to be filled, just enter the English text in the field "German Text" also.

Step 3: Select Save.



Docusnap 11 - Management (Configuring, Customizing and Extending of Docusnap)

GENERAL

Designs | Docusnap User | Docusnap Roles | Permission Categories | Management Tools | Number Server | Site Types | Color Scheme

Notification

Title: **2.** ContractsExpiringInOneMonthOrLess ☒ Active

SQL Statement: SELECT AccountName,CnTitle,CnDateEnd, LastModDate,CnDetail, CnCustomernr, CnEmail, CnTelephone, CnPartner
FROM tExContract,tExtensions,tAccounts,tExtensionsMapping
WHERE tExContract.ContractID=tExtensions.ExtensionID
AND tExtensions.Mapping.AccountID = tAccounts.AccountID

Now: (NOW) Domain: (DOMAIN) Company: (ACCOUNT)

German Text: Verträge, die in einem Monat oder weniger ablaufen English Text: Contracts expiring in one month or less

Description: Description:

1. **3.**

New **Delete** **Save**

Title	Statement	Active
ContractsExpiringInOneMonthOr...	SELECT AccountName,CnTitle,CnDateEnd, LastMod...	Yes
ContractsWithNoAssignment	SELECT tEC.CnTitle, tEC.CnDateEnd, tEC.CnDetail, t...	Yes
InvalidLicenses	Select LidName.ValidTo,ServiceValidTo,AccountNam...	Yes
InventoriedServerLaterOneWeek	SELECT HostName, HostTypeID, DomainName, Acc...	Yes
InventoriedWorkstationsLaterOn...	SELECT HostName, HostTypeID, DomainName, Acc...	Yes
LicensesExpiringInOneMonthOrL...	SELECT DISTINCT AccountName, LidName, Softwar...	Yes
LicensesExpiringInOneMonthOrL...	SELECT DISTINCT AccountName, LidName, Softwar...	Yes
ModifiedInvalidLicenses	SELECT AccountName,CnTitle,CnDateEnd, LastMod...	Yes
OutdatedContracts	Select DISTINCT (tExtensions.ExtensionID) ,CnTitle...	Yes
Reminder	SELECT DISTINCT (tExtensions.ExtensionID), Accou...	Yes

Close Management

Fig. 2 - Creating a notification definition

3.2 Application samples

3.2.1 Preliminary check of notification definitions

Since the notification definitions are SQL queries, they can be checked preliminarily for correctness in SQL Server Management Studio. Here, you also get a preview of the result.

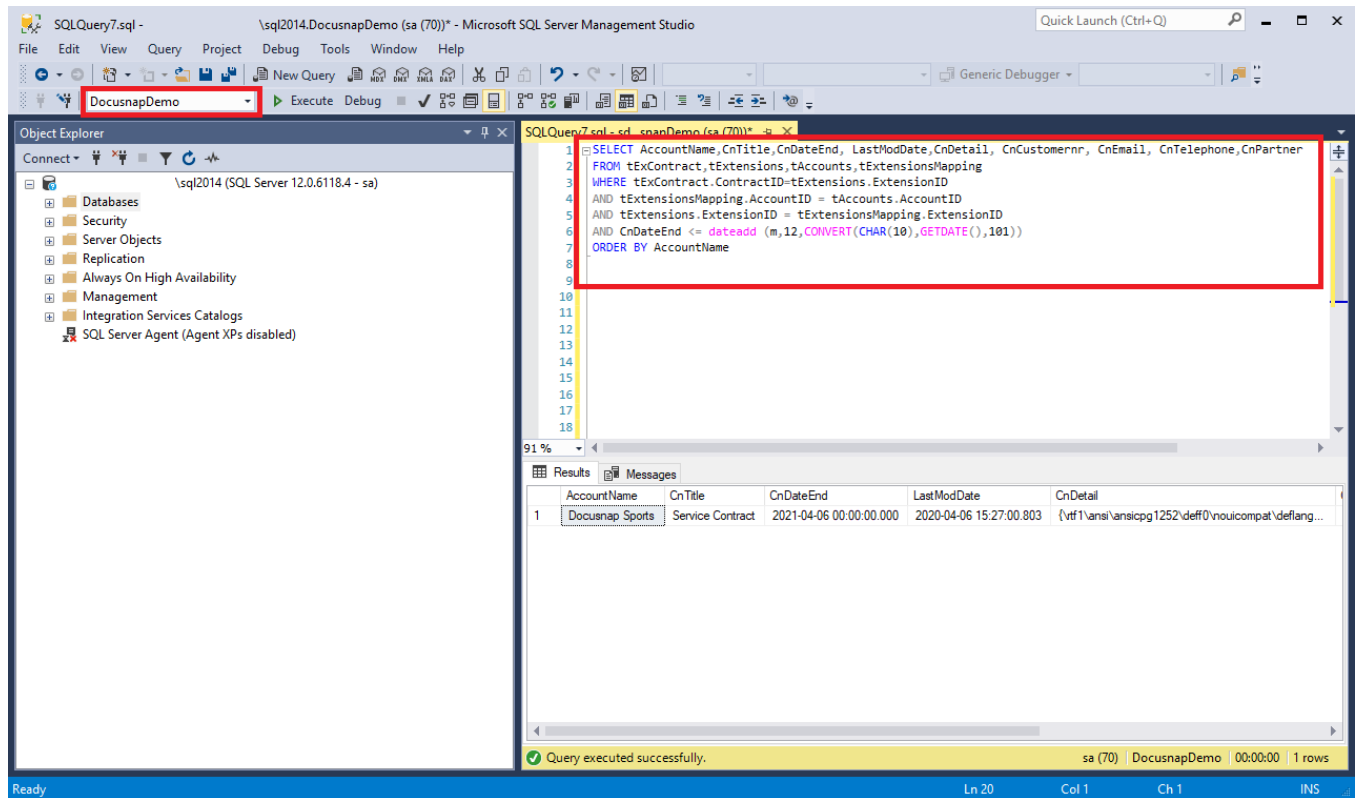


Fig. 3 - Accessing the SQL queries in SQL Server Management Studio

Important: Make sure to run the SQL query with the correct database.

However, the placeholders used in Docusnap must be replaced for a query in SQL Server Management Studio:

Meaning	Placeholder in Docusnap	Replacement in SQL Server Mgmt Studio	Remark
Today	{NOW}	'04/20/15' CURRENT_TIMESTAMP	Make sure to indicate the date in the correct format as used in the database. Alternatively, you can use the SQL variable CURRENT_TIMESTAMP.
Domain	{DOMAIN}	DomainID	The Docusnap domain IDs can be displayed via the following SQL query: <code>SELECT TOP 100 [DomainID],[DomainName] FROM [tDomains]</code>
Company	{ACCOUNT}	AccountID	The Docusnap account IDs can be displayed via the following SQL query: <code>SELECT TOP 100 [AccountID],[AccountName] FROM [tAccounts]</code>

3.2.2 Contracts

The following query lists all expired contracts of a company:

```
SELECT DISTINCT AccountName, CnTitle, CnDateEnd, LastModDate,CnDetail, CnCustomernr, CnEmail,
CnTelephone, CnPartner

FROM tExContract
LEFT JOIN tExtensions on tExContract.ContractID = tExtensions.ExtensionID
LEFT JOIN tExtensionsMapping on tExtensions.ExtensionID = tExtensionsMapping.ExtensionID
LEFT JOIN tAccounts on tExtensionsMapping.AccountID = tAccounts.AccountID

WHERE CnDateEnd <= {now}
AND tAccounts.AccountID = {ACCOUNT} --Filtering on selected company
```

Query contracts from all companies that expire in one month or less:

```
SELECT AccountName, CnTitle, CnDateEnd, LastModDate,CnDetail, CnCustomernr, CnEmail, CnTelephone,
CnPartner

FROM tExContract
LEFT JOIN tExtensions on tExContract.ContractID = tExtensions.ExtensionID
LEFT JOIN tExtensionsMapping on tExtensions.ExtensionID = tExtensionsMapping.ExtensionID
LEFT JOIN tAccounts on tExtensionsMapping.AccountID = tAccounts.AccountID

WHERE CnDateEnd <= DATEADD (MM, 1, SYSDATETIME()) -- MM, 1, ... -> 1 month in advance
```

If you need more lead time, you can set it to three months in advance, for example, as follows:

```
SELECT AccountName, CnTitle, CnDateEnd, LastModDate,CnDetail, CnCustomernr, CnEmail, CnTelephone,
CnPartner

FROM tExContract
LEFT JOIN tExtensions on tExContract.ContractID = tExtensions.ExtensionID
LEFT JOIN tExtensionsMapping on tExtensions.ExtensionID = tExtensionsMapping.ExtensionID
LEFT JOIN tAccounts on tExtensionsMapping.AccountID = tAccounts.AccountID

WHERE CnDateEnd <= DATEADD (MM, 3, SYSDATETIME()) --MM, 3, ... -> 3 month in advance
```

3.2.3 Licenses

The SQL query lists all licenses of a company that expire in a month or less:

```
SELECT SoftwareName, LicName, ValidTo, ServiceValidTo, AccountName
FROM tSoftwareLicenses
    LEFT JOIN tSoftwareProducts on tSoftwareLicenses.SoftwareID = tSoftwareProducts.SoftwareID
    LEFT JOIN tAccounts on tSoftwareProducts.AccountID = tAccounts.AccountID
WHERE tSoftwareLicenses.ValidInfinite = 0
    AND ValidTo <= DATEADD (MM, 1, SYSDATETIME())      --MM, 1 ,... -> 1 month in advance
    AND tAccounts.AccountID = {ACCOUNT}              --Filtering on the selected company
ORDER BY LicName
```

Query licenses from all companies that expire in a month or less:

```
SELECT DISTINCT AccountName, LicName, SoftwareName, SoftwarePublisher, SoftwareVersion, ValidTo,
ServiceValidTo, Customernr, Telephone, Email
FROM tSoftwareLicenses
    LEFT JOIN tSoftwareProducts on tSoftwareLicenses.SoftwareID = tSoftwareProducts.SoftwareID
    LEFT JOIN tAccounts on tSoftwareProducts.AccountID = tAccounts.AccountID
WHERE tSoftwareLicenses.ValidInfinite = 0
    AND ValidTo <= DATEADD (MM, 1, SYSDATETIME())      --MM, 1 ,... -> 1 month in advance
ORDER BY AccountName, LicName
```

Query the licenses of all companies that expire within the next 3 months:

```
SELECT DISTINCT AccountName, LicName, SoftwareName, SoftwarePublisher, SoftwareVersion, ValidTo,
ServiceValidTo, Customernr, Telephone, Email
FROM tSoftwareLicenses
    LEFT JOIN tSoftwareProducts on tSoftwareLicenses.SoftwareID = tSoftwareProducts.SoftwareID
    LEFT JOIN tAccounts on tSoftwareProducts.AccountID = tAccounts.AccountID
WHERE tSoftwareLicenses.ValidInfinite = 0
    AND ValidTo <= DATEADD (MM, 3, SYSDATETIME())      --MM, 3 ,... -> 3 month in advance
ORDER BY AccountName, LicName
```

3.2.4 Maintenance contracts (licenses)

Within a license definition, the validity of the maintenance contract can be stored in addition to the license validity. With the following query you can display all maintenance contracts of a company that expire in one month or less:

```
SELECT SoftwareName, LicName, ServiceValidTo, AccountName
FROM tSoftwareLicenses
  LEFT JOIN tSoftwareProducts on tSoftwareLicenses.SoftwareID = tSoftwareProducts.SoftwareID
  LEFT JOIN tAccounts on tSoftwareProducts.AccountID = tAccounts.AccountID
WHERE tSoftwareLicenses.ValidInfinite = 0
  AND ServiceValidTo <= DATEADD (MM, 1, SYSDATETIME())      --MM, 1 ,... -> 1 month in advance
  AND tAccounts.AccountID = {ACCOUNT}                      --Filtering on the selected company
ORDER BY LicName
```

The following query lists the maintenance contracts of all companies that expire in one month or less.

```
SELECT DISTINCT AccountName, LicName, SoftwareName, SoftwarePublisher, SoftwareVersion, ServiceValidTo,
  Customernr, Telephone, Email
FROM tSoftwareLicenses
  LEFT JOIN tSoftwareProducts on tSoftwareLicenses.SoftwareID = tSoftwareProducts.SoftwareID
  LEFT JOIN tAccounts on tSoftwareProducts.AccountID = tAccounts.AccountID
WHERE tSoftwareLicenses.ValidInfinite = 0
  AND ServiceValidTo <= DATEADD (MM, 1, SYSDATETIME())      --MM, 1 ,... -> 1 month in advance
ORDER BY AccountName, LicName
```

4. Creating a notification

The wizard for creating notifications can be opened from **All Tasks**.

All assistants can be displayed in the multi-function bar. The notification wizard can be opened then. It can be found directly with the search function.

If the Notification Wizard is marked as a favorite, it can be opened directly from the Multi-Function Bar.

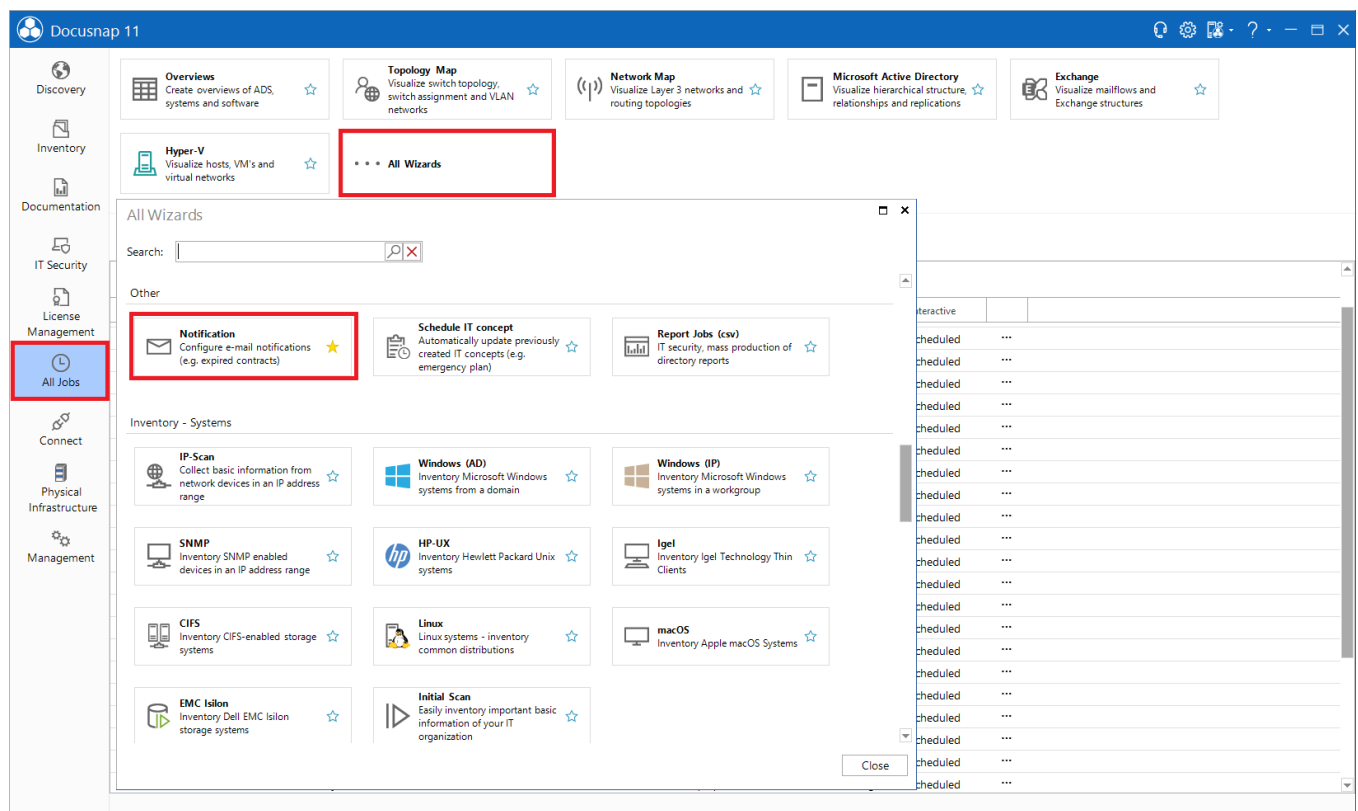


Fig. 4 – Notification Wizard

The first step is to select a company. If the filtering in the message definition was

```
tAccounts.AccountID = {ACCOUNT}
```

was used in the message definition, the results are limited to this selected client.

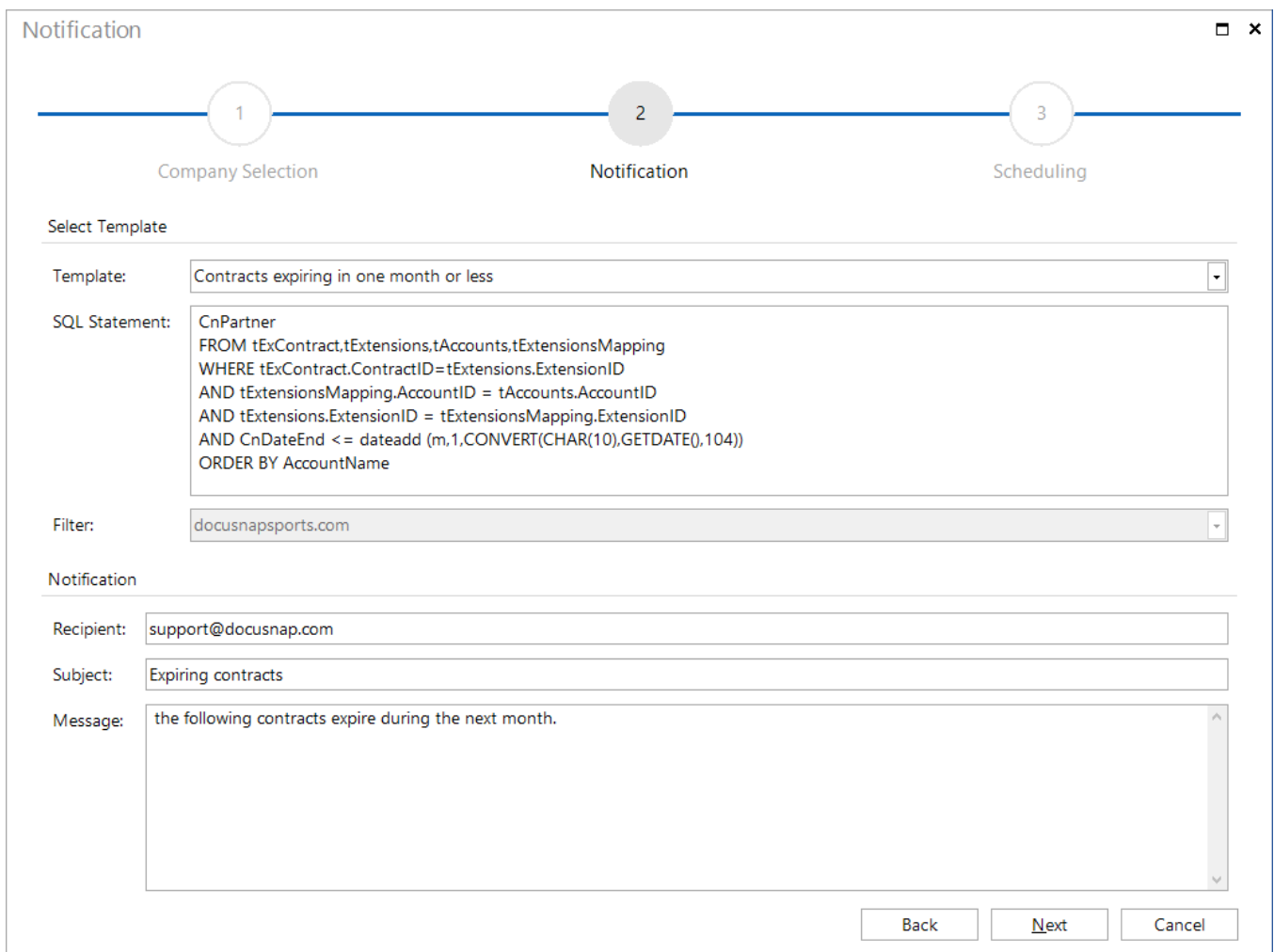
The second step is to select one of the existing message definitions and specify at least one recipient and subject for sending the email. A list of the information returned by the SQL query (e.g., expired contracts) is attached to the email as an Excel file.

If you want to store multiple recipients, you can separate them with a semicolon.

In the Scheduling step you define the execution of the notification task - e.g.

- Task type = Repeated
- Occurrence = Weekly
- Repeated every 1 week on Monday at 9:00 a.m.

Please note that the Excel file is given the name of the scheduled notification task. Please use only characters that are allowed in a file name here.



Notification

1 Company Selection 2 Notification 3 Scheduling

Select Template

Template: Contracts expiring in one month or less

SQL Statement:

```
CnPartner
FROM tExContract,tExtensions,tAccounts,tExtensionsMapping
WHERE tExContract.ContractID=tExtensions.ExtensionID
AND tExtensionsMapping.AccountID = tAccounts.AccountID
AND tExtensions.ExtensionID = tExtensionsMapping.ExtensionID
AND CnDateEnd <= dateadd (m,1,CONVERT(CHAR(10),GETDATE(),104))
ORDER BY AccountName
```

Filter: docusnapsports.com

Notification

Recipient: support@docusnap.com

Subject: Expiring contracts

Message: the following contracts expire during the next month.

Back Next Cancel

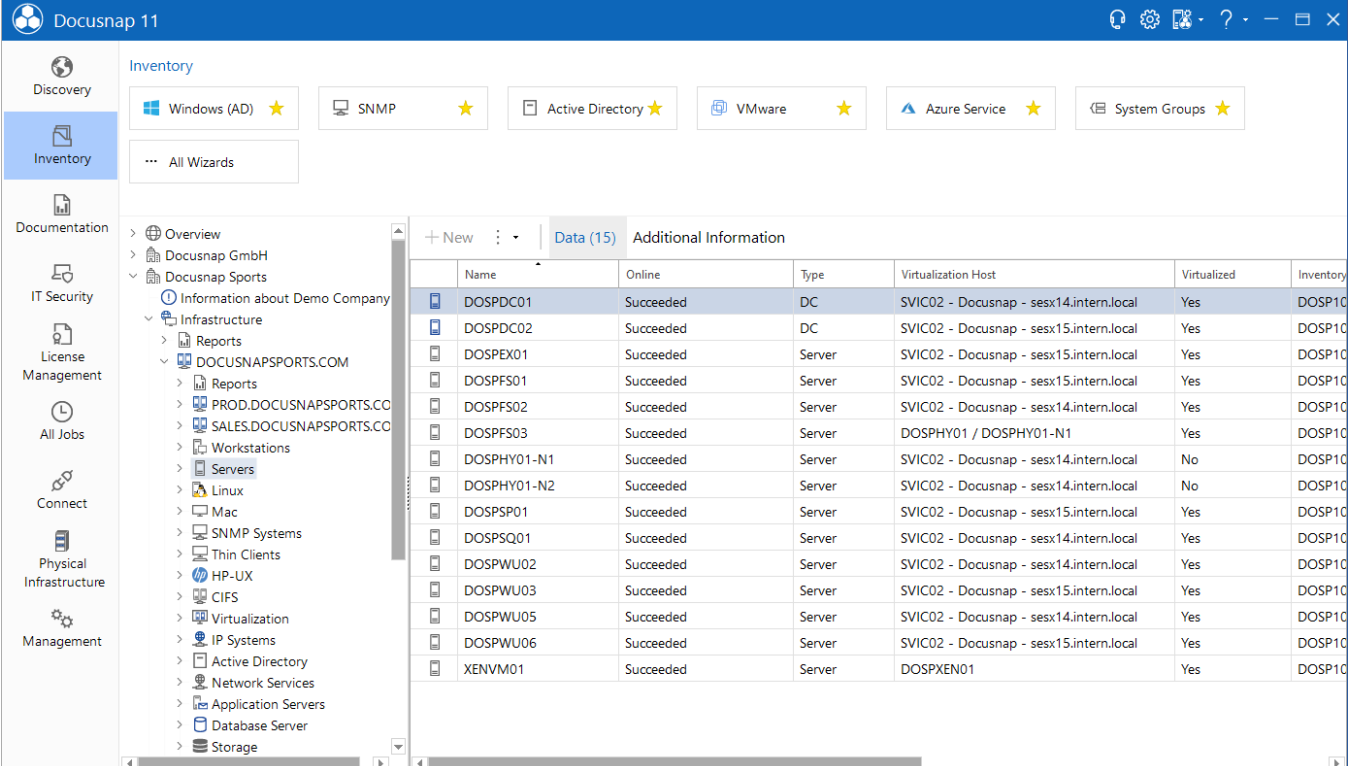
Fig. 5 - Create Notification

5. Maintenance tasks

As discussed previously, message definitions are SQL statements that are executed on the database via the notification task. Instead of SELECT queries, UPDATE statements can also be executed. The steps for creating the message definition, as well as the notification task, are the same as previously described.

Only for scheduling it makes sense to run the notification task more frequently - e.g., daily.

A regular use case for these maintenance tasks is, for example, the automatic filling of the virtualization host field of the inventoried virtual systems:



The screenshot shows the Docusnap 11 Inventory window. The left sidebar contains navigation icons for Discovery, Inventory, Documentation, IT Security, License Management, All Jobs, Connect, Physical Infrastructure, and Management. The main area displays a table of inventoried systems. The table has columns: Name, Online, Type, Virtualization Host, Virtualized, and Inventory. The data is filtered to show 15 items.

Name	Online	Type	Virtualization Host	Virtualized	Inventory
DOSPC01	Succeeded	DC	SVIC02 - Docusnap - sesx14.intern.local	Yes	DOSP10
DOSPC02	Succeeded	DC	SVIC02 - Docusnap - sesx15.intern.local	Yes	DOSP10
DOSPEX01	Succeeded	Server	SVIC02 - Docusnap - sesx15.intern.local	Yes	DOSP10
DOSPFS01	Succeeded	Server	SVIC02 - Docusnap - sesx15.intern.local	Yes	DOSP10
DOSPFS02	Succeeded	Server	SVIC02 - Docusnap - sesx14.intern.local	Yes	DOSP10
DOSPFS03	Succeeded	Server	DOSPHY01 / DOSPHY01-N1	Yes	DOSP10
DOSPHY01-N1	Succeeded	Server	SVIC02 - Docusnap - sesx14.intern.local	No	DOSP10
DOSPHY01-N2	Succeeded	Server	SVIC02 - Docusnap - sesx14.intern.local	No	DOSP10
DOSPSP01	Succeeded	Server	SVIC02 - Docusnap - sesx15.intern.local	Yes	DOSP10
DOSPSP01	Succeeded	Server	SVIC02 - Docusnap - sesx14.intern.local	Yes	DOSP10
DOSPWU02	Succeeded	Server	SVIC02 - Docusnap - sesx14.intern.local	Yes	DOSP10
DOSPWU03	Succeeded	Server	SVIC02 - Docusnap - sesx15.intern.local	Yes	DOSP10
DOSPWU05	Succeeded	Server	SVIC02 - Docusnap - sesx14.intern.local	Yes	DOSP10
DOSPWU06	Succeeded	Server	SVIC02 - Docusnap - sesx15.intern.local	Yes	DOSP10
XENVM01	Succeeded	Server	DOSPXEN01	Yes	DOSP10

Fig. 6 - Virtualization host for inventoried systems

In addition to the actual systems, Docusnap also inventories the virtualization solutions HyperV, VMware and Citrix Hypervisor.

If the VM names match the system names, the information about which VM is running on which host can be automatically applied. Below you will find the examples with corresponding update statements.

VMWare

```

UPDATE tHosts SET VirtualServer = CONCAT(ServiceHostName, ' - ', DataCenterName, ' - ', ESXHostName)
FROM tESXVirtualMachine, tESXHost, tHosts, tESXComputeResource, tESXDataCenterHostFolder,
tESXDataCenter, tESXFolder, tESXServiceDocu, tESXDataCenterFolder, tDomains AS HostDomain, tESXService,
tDomains AS ESXDomain, tESXVmHwNic, tESXVmHardware,
(
    select tNetworkAdapter.*, tHosts.HostID, tDomains.AccountID from tNetworkAdapter, tDocu, tHosts,
tDomains
    where tNetworkAdapter.AdapterID in (
        select tNetworkAdapterConfiguration.AdapterID from tNetworkAdapterConfiguration)
    and tNetworkAdapter.DocuID = tDocu.DocuID
    and tDocu.Archiv = 0
    and tDocu.HostID = tHosts.HostID
    and tDomains.DomainID = tHosts.DomainID
) as vNetworkAdapter
WHERE tESXVmHwNic.MacAddress = vNetworkAdapter.MacAddress
and tHosts.HostID = vNetworkAdapter.HostID
AND tESXVirtualMachine.HostIdentifier = tESXHost.Identifier
AND tESXComputeResource.ComputeResourceID = tESXHost.ComputeResourceID
AND tESXDataCenterHostFolder.HostFolderID = tESXComputeResource.HostFolderID
AND tESXDataCenter.DataCenterID = tESXDataCenterHostFolder.DataCenterID
AND tESXFolder.ESXFolderID = tESXDataCenter.ESXFolderID
AND tESXServiceDocu.DocuID = tESXFolder.DocuID
AND tESXDataCenterFolder.DataCenterID = tESXDataCenter.DataCenterID
AND tESXDataCenterFolder.FolderID = tESXVirtualMachine.FolderID
AND tESXServiceDocu.Archiv = 0
AND tHosts.DomainID = HostDomain.DomainID
AND tESXServiceDocu.ServiceID = tESXService.ServiceID
AND tESXService.DomainID = ESXDomain.DomainID
AND tESXVmHardware.VirtualMachineID = tESXVirtualMachine.VirtualMachineID
AND tESXVmHwNic.VmHardwareID = tESXVmHardware.VmHardwareID
AND HostDomain.AccountID = ESXDomain.AccountID
AND vNetworkAdapter.AccountID = HostDomain.AccountID
AND ESXDomain.AccountID = {ACCOUNT} --Filtering on the selected company
AND HostDomain.AccountID = {ACCOUNT} --Filtering on the selected company

```

The statement adds the following information as a virtualization host:

- ESX Service Name (the inventoried vCenter).
- Data Center Name
- ESX Host

Furthermore, within the statement, the last two columns filter on the account/company for which the notification task is set up. If there are multiple companies in your Docusnap database and you do not want to set up a separate notification task for each, then simply remove the last two lines.

HyperV

```

update tHosts set VirtualServer = tHVNode.Name
from tHosts, tHVNode, tHVComputerSystem, tHVDocu, tDocu, tHVSystemService, tDomains AS HostDomain,
tDomains AS HyperVDomain, tHVVirtualSystemSettings, tHVEthernet,
(
    select tNetworkAdapter.*, tHosts.HostID, tDomains.AccountID from tNetworkAdapter, tDocu, tHosts,
tDomains
    where tNetworkAdapter.AdapterID in (
        select tNetworkAdapterConfiguration.AdapterID from tNetworkAdapterConfiguration)
    and tNetworkAdapter.DocuID = tDocu.DocuID
    and tDocu.Archiv = 0
    and tDocu.HostID = tHosts.HostID
    and tDomains.DomainID = tHosts.DomainID
) as vNetworkAdapter
where tHVNode.HVNodeID = tHVComputerSystem.HVNodeID
and tHosts.HostID = vNetworkAdapter.HostID
and tHVComputerSystem.HVComputerSystemID = tHVVirtualSystemSettings.HVComputerSystemID
and tHVEthernet.HVVirtualSystemSettingsID = tHVVirtualSystemSettings.HVVirtualSystemSettingsID
and vNetworkAdapter.MACAddress = tHVEthernet.Address
and tHosts.HostID = tDocu.HostID
and tHVNode.HVDocuID = tHVDocu.HVDocuID
and tHVSystemService.HVSystemServiceID = tHVDocu.HVSystemServiceID
and tDocu.Archiv = 0
and tHVDocu.Archiv = 0
and tHosts.DomainID = HostDomain.DomainID
and tHVSystemService.DomainID = HyperVDomain.DomainID
and HostDomain.AccountID = HyperVDomain.AccountID
and HostDomain.AccountID = vNetworkAdapter.AccountID
and HyperVDomain.AccountID = {ACCOUNT} -- Filtering on the selected company
and HostDomain.AccountID = {ACCOUNT} -- Filtering on the selected company

```

The statement adds the HyperV host.

Furthermore, the last two columns within the statement filter on the account/company for which the notification task is set up. If there are multiple companies in your Docusnap database and you do not want to set up a notification task for each of them, simply remove the last two lines.

Citrix Hypervisor

```

UPDATE tHosts SET VirtualServer = tXenHost.Name
FROM tXenHost, tXenHostVMs, tXenPoolDocu, tHosts, tXen, tDomains AS HostDomain, tDomains AS XenDomain,
tXenVMNICs,
(
    select tNetworkAdapter.*, tHosts.HostID, tDomains.AccountID from tNetworkAdapter, tDocu, tHosts,
tDomains
    where tNetworkAdapter.AdapterID in (
        select tNetworkAdapterConfiguration.AdapterID from tNetworkAdapterConfiguration)
    and tNetworkAdapter.DocuID = tDocu.DocuID
    and tDocu.Archiv = 0
    and tDocu.HostID = tHosts.HostID
    and tDomains.DomainID = tHosts.DomainID
) as vNetworkAdapter
WHERE tXenHost.HostID = tXenHostVMs.HostID
and tHosts.HostID = vNetworkAdapter.HostID
and tXenVMNICs.MAC = vNetworkAdapter.MACAddress
AND tXenVMNICs.VMID = tXenHostVMs.VMID
AND tXenPoolDocu.DocuID = tXenHost.DocuID
and tHosts.DomainID = HostDomain.DomainID
and tXenPoolDocu.XenID = tXen.XenID
and tXen.DomainID = XenDomain.DomainID
and HostDomain.AccountID = XenDomain.AccountID
and vNetworkAdapter.AccountID = HostDomain.AccountID
AND tXenPoolDocu.Archiv = 0
and XenDomain.AccountID = {ACCOUNT}           -- Filtering on the selected company
and HostDomain.AccountID = {ACCOUNT}           -- Filtering on the selected company

```

The statement adds the Xen host.

Furthermore, within the statement, the last two columns filter on the account/company for which the notification task is set up. If there are multiple companies in your Docusnap database and you do not want to set up a separate notification task for each, then simply remove the last two lines.

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VERSION HISTORY

Date	Description
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