



BlackBerry AtHoc



BlackBerry AtHoc Networked Crisis Communication
**MSI Notification Delivery
Service OPM Installation
Guide**

Version 2.9.7, April 2017

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Chapter 1: Getting started

The BlackBerry AtHoc Notification Delivery Service (NDS) is a dedicated server that processes and delivers alert messages from the NDS host services (plug-ins). This document describes steps to install NDS to the latest release.

Contact BlackBerry AtHoc technical support

If you encounter any problems or have questions regarding the BlackBerry AtHoc software, please contact BlackBerry AtHoc technical support using any of the following methods:

- **Web Site:** <https://support.athoc.com/customer-support-portal/login.html>
- **Telephone:** (650) 685-3000 or (888) GO-ATHOC (462-8462)
- **E-mail:** support@athoc.com

Tip: The Web-based support form is the primary method for contacting BlackBerry AtHoc technical support.

Chapter 2: Verify installation prerequisites

The following sections describe hardware and software requirements that are necessary for installing and configuring NDS.

Hardware requirements

The minimum hardware requirements include the following items:

- A minimum of Dual-Core Dual CPUs (2 Dual-Core CPUs, such as Xeon 51xx family, Xeon E53xx family, or X53xx family) 2 GHz or higher
- One database server core for each two application server cores
- Minimum of 512 MB per application server core plus 2 GB RAM for Windows Server
- Recommended: Dual, redundant Intel NICs and power supplies
- If using Broadcom NICs, perform the following steps:
 1. Ensure that the latest drivers are installed
 2. Disable the TCP Chimney feature, as described in the following Microsoft® article:
<http://support.microsoft.com/kb/951037>
- Disk space for storage on a RAID 5, RAID 0+1 or RAID 10 configured disk system. The exact allocation of the disks depends on the hardware configuration

Notes:

- For Standalone server set up, limit SQL RAM usage to 80-85% of the total system RAM
- For Combo server set up, limit SQL RAM usage to 60% of the total system RAM
- The installation procedure requires at least 20 GB free for data

Software requirements

The minimum software requirements are:

- Windows® Server® 2008 R2 SP1 Standard Edition or Windows Server 2012 R2
- Microsoft® SQL Server® Standard 2008 R2 or SQL Server 2012. Make sure that the SQL Server Agent Service is configured as “Automatic Start”.
- Microsoft® System CLR Types for Microsoft® SQL Server® 2012
- Internet Information Services (IIS) Role Service
- Microsoft .NET® Framework Version 4.6.1
- Windows Management Framework 3.0: (PowerShell x64 bit, 3.0 Support)
- IIS extension enabled for ASP.NET

- BlackBerry AtHoc 6.1.8 system with patch level 85, or later
Required when installing the application server in combination mode. Combination mode is used when AtHoc Management System is installed on the application server with NDS.

Administration account requirements

Before you install, ensure that the user account that you use meets the following criteria:

- The admin user that installs NDS and plugins should have the same Windows administration user account as the BlackBerry AtHoc user account.

The BlackBerry AtHoc application and NDS are run on IIS, and the IIS USR or NETWORK SERVICE group need access to the AtHocENS folder. Additionally, the services might need DLLs to be either GACed, located in a folder with access permission, or copied to the folder or /bin folder of the program.

- This user needs to be an administrator account in SQL Server:
 - SA account must be a sysadmin
 - NGAD can be public in Server Roles
 - NGAD becomes the owner of the database during the NDS installation.
Note: This can **conflict** with using Windows authentication where the dbo is supposed to be the Windows service account.
- The Admin user, IIS user, and Network service user need EDIT access to AtHocENS folders.

Chapter 3: Install NDS components-stand alone

The following sections describe how to install NDS on the application server and the database server.

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Deployment modes for NDS

There are now two deployment modes for NDS.

- **Stand alone mode:** This mode installs NDS on an application server without BlackBerry AtHoc.
- **Combined mode:** Use this mode when BlackBerry AtHoc management system is also installed on the same application server. To learn about installing BlackBerry AtHoc management system, see *BlackBerry AtHoc Installation and Configuration Guide*.

The following table describes the differences that are included with one or both of the products. It is important to plan the installation or upgrade knowing which components are included.

Component	Stand alone	Combined with BlackBerryAtHoc
AtHocDeliveryService	Required	Required
Ngdelivery Database	Required	Required
NgdeliveryAccount Database	Required	Required
NgdeliveryLog Database	Required	Required
NGDiagnostic Database	Required	Provided by IWSAlerts

Note: The .msi installer will install NDS on a combined mode only if BlackBerry AtHoc management system is installed on the application server. If BlackBerry AtHoc management system is not installed on application server, the .msi installer will install NDS on Stand alone mode.

Install NDS

Installation user account prerequisites:

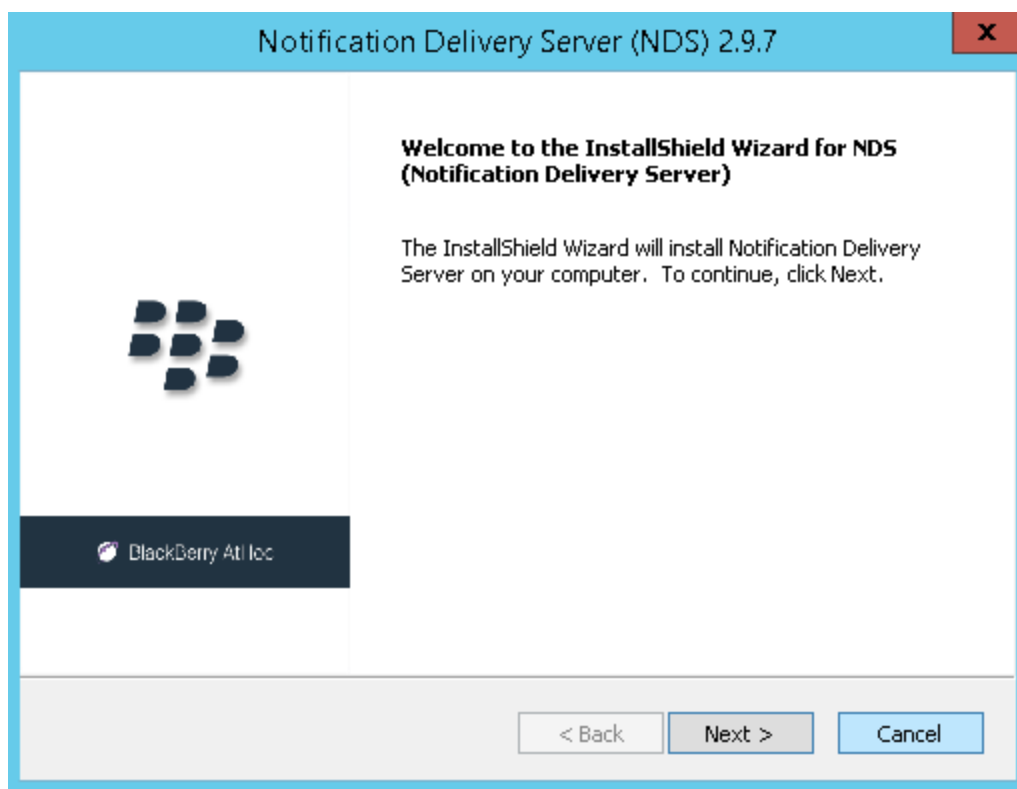
As an installer, you must have the following:

- SQL Server sysadmin and Windows admin rights.

- New database installation requires that the SQL Server service account have permission to write the file system. Ensure the SQL Server service account has that, or change it to Local System account.
- For custom ngad: A password for the "NGAD," the owner of the AtHoc "ng" databases. If ngad user is not created the installer will automatically create ngad login.
- Full control for the directory in which the database installation scripts are located. Right-click on the directory and open the properties to verify.
- Full control of the database directory folder that contains the .ldf, .mdf, and .ndf files. Right-click on the directory and open the properties to verify.
- The database server must be installed first when installing separate application and database servers. When installing both application and database servers on the same machine (a "combo install"), they can be installed at the same time.

To install the NDS, perform the following steps:

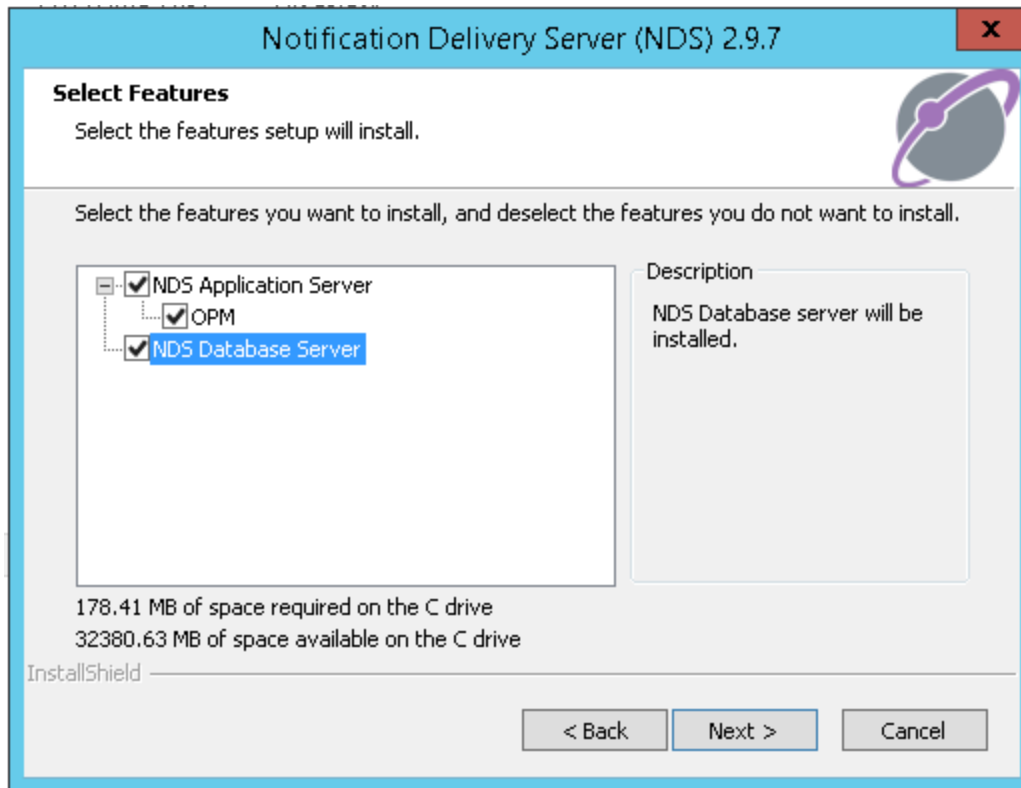
1. Start the installation by double-clicking the setup file.
2. On the welcome screen, click **Next**.



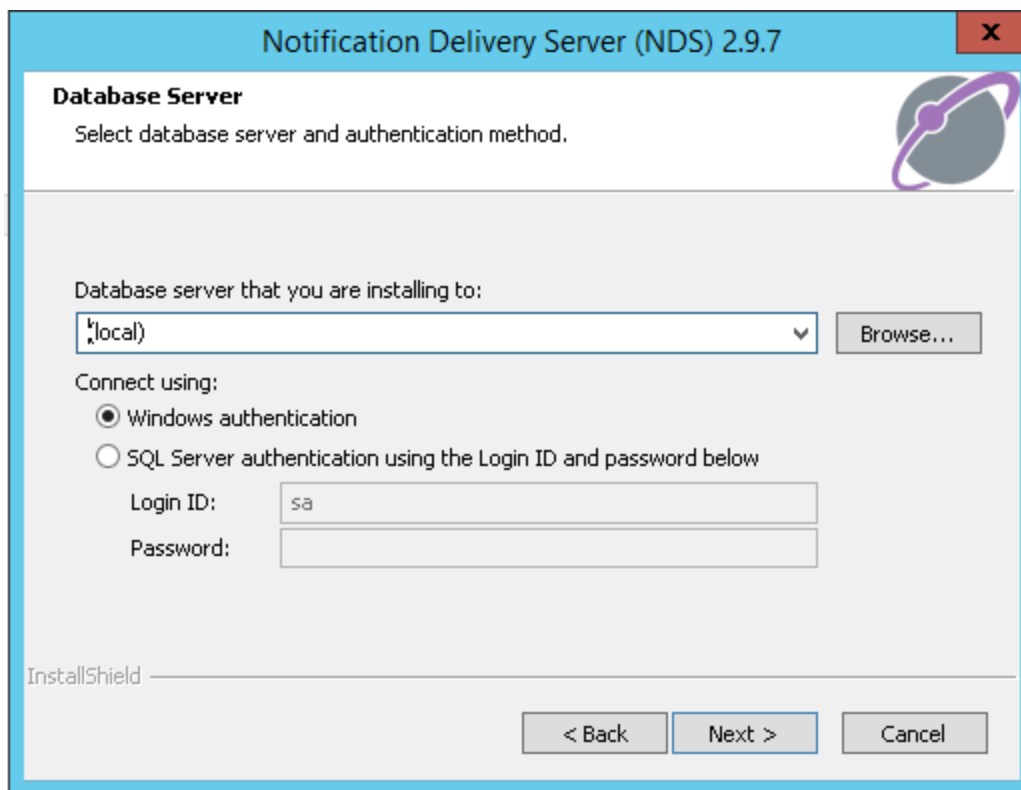
3. Select the features you want to install and click **Next**.
 - **NDS Application Server:** Installs the NDS Application Server.
 - **OPM:** Installs the OPM plug-in.

- **NDS Database Server:** Installs the NDS Database Server.

Note: The database server must be installed first when installing separate application and database servers. Do not select the **NDS Database Server** check box if you have already installed the database on a different host.



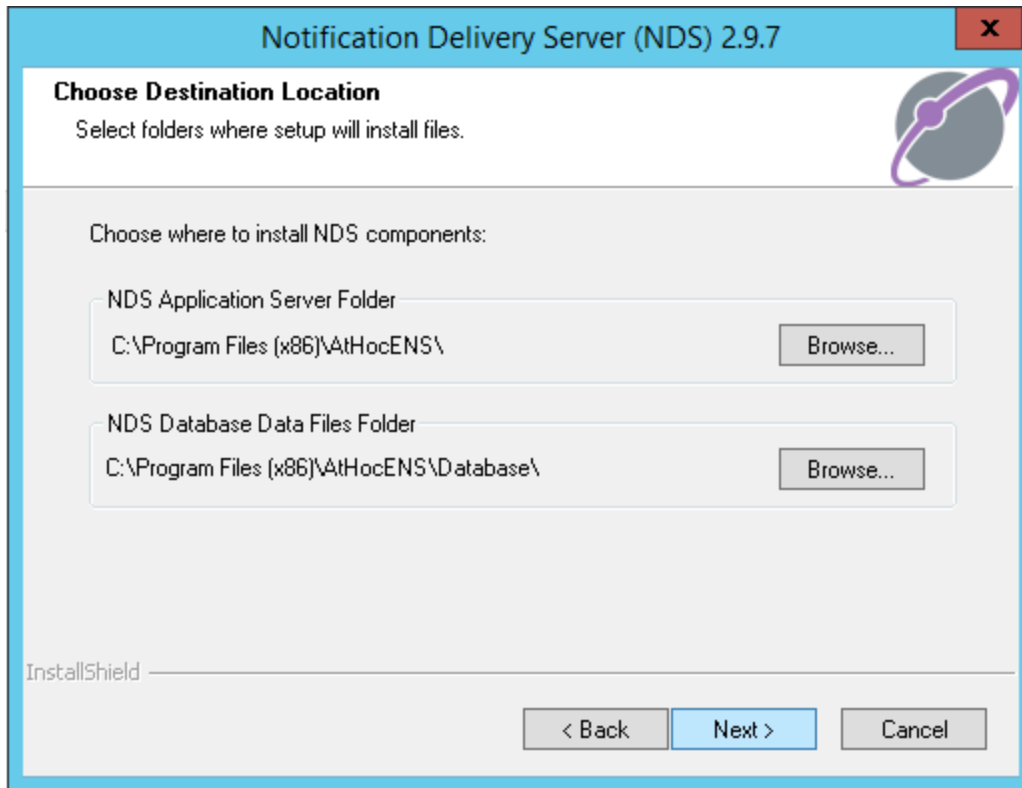
4. Use the default database server or click **Browse** to locate the database server installed on the remote server.
5. Choose the Authentication mode from the following and provide the credentials if required.
 - **Windows authentication:** For detailed information about Windows Authentication, see [Configure Windows Authentication](#)
 - **SQL Server authentication using the Login ID and password below:** Enter "sa" credentials or custom database username with sysadmin role.



6. Choose one of the following and click **Next**.
- **SQL server authentication using custom ngad password:** Enter ngad username and a password for each SQL Server user by supplying your own values.
 - **SQL server authentication using default ngad password:** Use the existing default ngad username and password.
- Note:** Do not use Windows Authentication for ngad.

The screenshot shows a dialog box titled "Notification Delivery Server (NDS) 2.9.7" with a close button (X) in the top right corner. The main heading is "Database User Login" and the subtitle is "Configure the database connection for NDS application server". There is a logo in the top right corner. The instructions say "Configure the ngad user for the NDS database". There are three radio button options: "Windows authentication", "SQL Server authentication using custom ngad password", and "SQL Server authentication using default ngad password", with the last one selected. Below this is a section titled "NGAD Database User" containing three input fields: "Login ID:" with the text "ngad", "Password:" with ten black dots, and "Re-type:" with ten black dots. At the bottom left is the "InstallShield" logo. At the bottom right are three buttons: "< Back", "Next >" (highlighted in blue), and "Cancel".

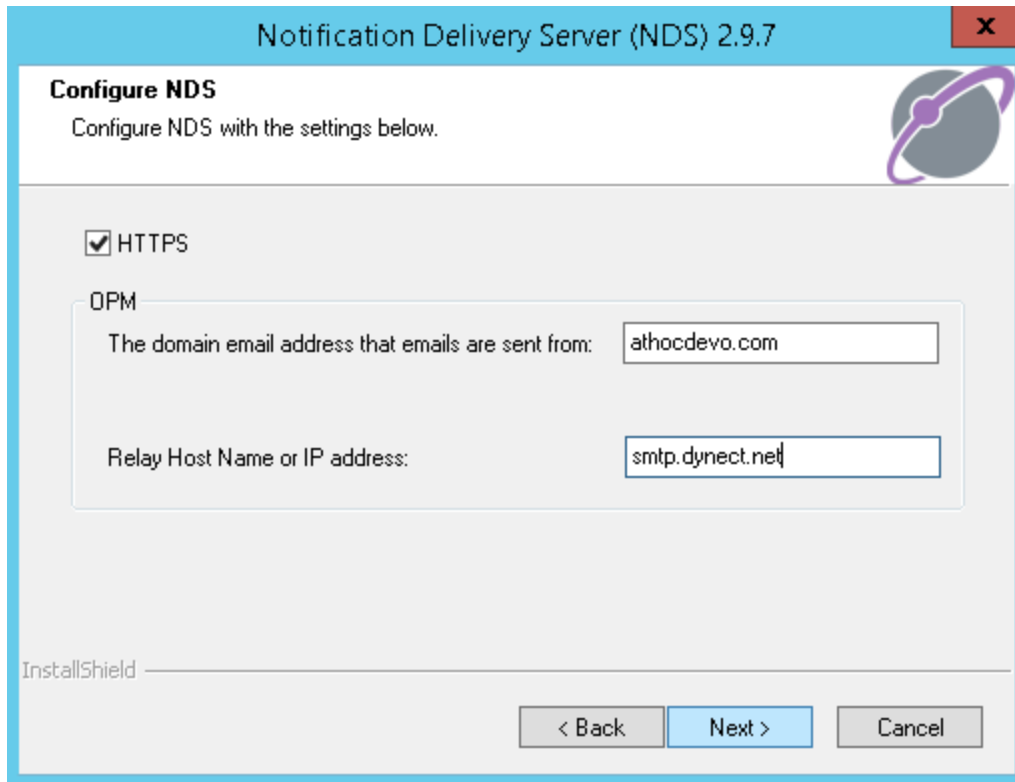
7. Specify the folders to install the NDS components by clicking the associated **Browse** button to specify the NDS Application server folder and the NDS Database data files folder that you want. Or click **Next** to accept the default locations for both folders.



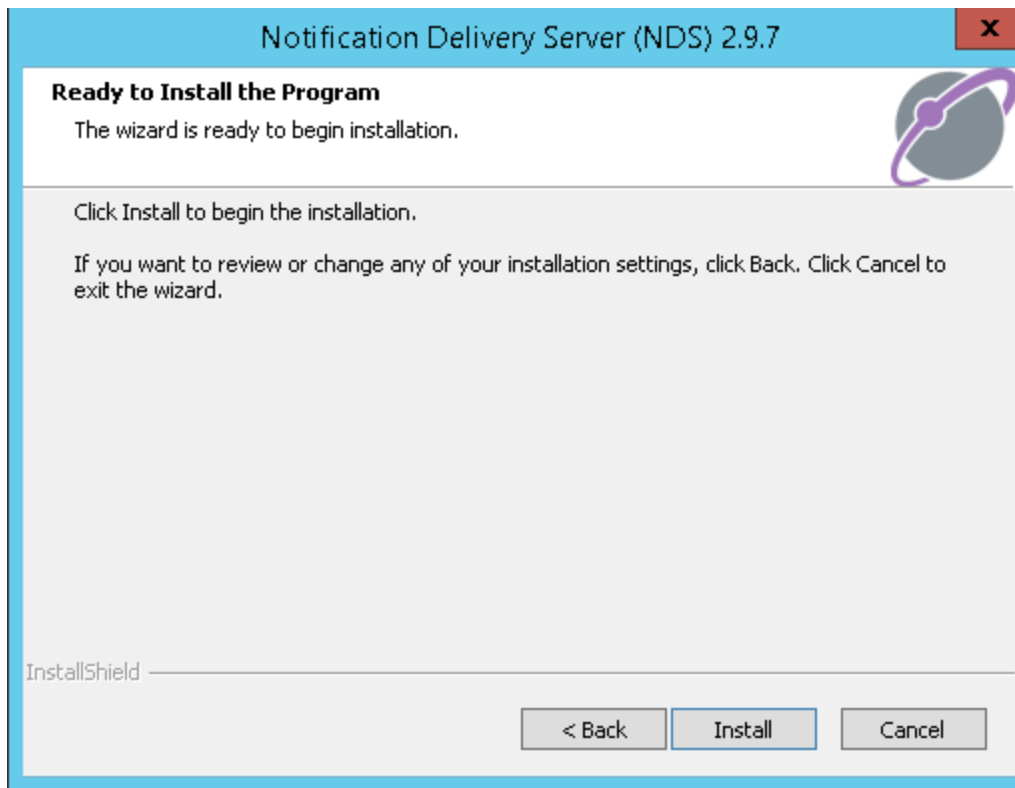
8. Specify the NDS configuration settings:

- Select the HTTPS check box to enable HTTPS.
- Enter the domain email address which will be used to send out email alerts.
- Enter the Relay Host name or IP address of the email server.

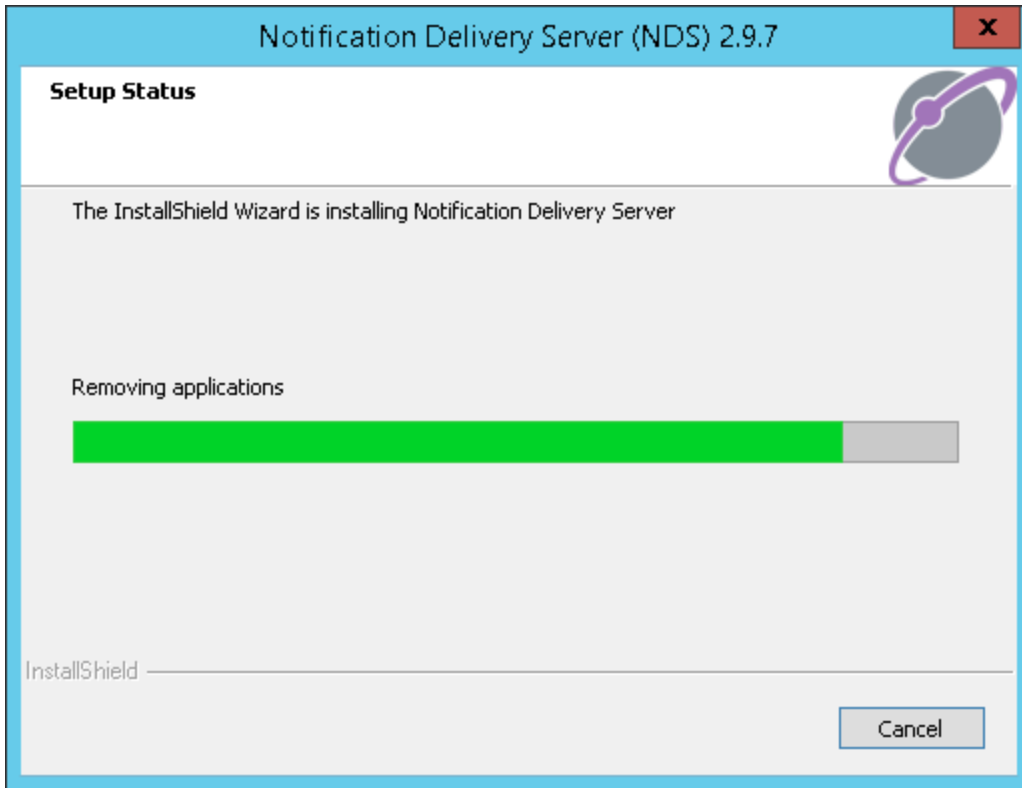
Note: For more information about OPM plug-in configuration keys, refer to [OPM advance settings and configuration](#).



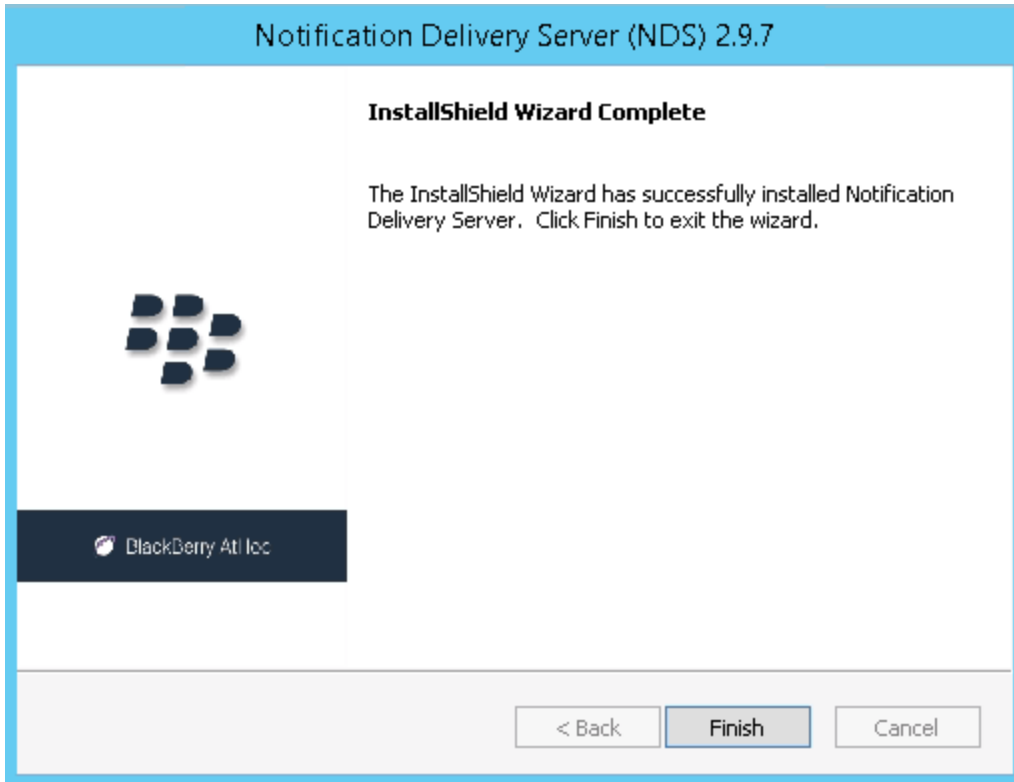
9. Click **Install** to begin the installation or click **Back** to change the installation settings.



10. View the onscreen progress bar to gauge the status of the installation.



11. When the installation completes, click **Finish** to exit the Setup Wizard.



Chapter 4: Install NDS components- combined

The following sections describe how to install NDS on the application server and the database server.

Deployment modes for NDS	13
Install NDS	13

Deployment modes for NDS

There are now two deployment modes for NDS.

- **Stand alone mode:** This mode installs NDS on an application server without BlackBerry AtHoc.
- **Combined mode:** Use this mode when BlackBerry AtHoc management system is also installed on the same application server. To learn about installing BlackBerry AtHoc management system, see *BlackBerry AtHoc Installation and Configuration Guide*.

The following table describes the differences that are included with one or both of the products. It is important to plan the installation or upgrade knowing which components are included.

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NgdeliveryLog Database	Required	Required
NGDiagnostic Database	Required	Provided by IWSAlerts

Note: The .msi installer will install NDS on a combined mode only if BlackBerry AtHoc management system is installed on the application server. If BlackBerry AtHoc management system is not installed on application server, the .msi installer will install NDS on Stand alone mode.

Install NDS

Installation user account prerequisites:

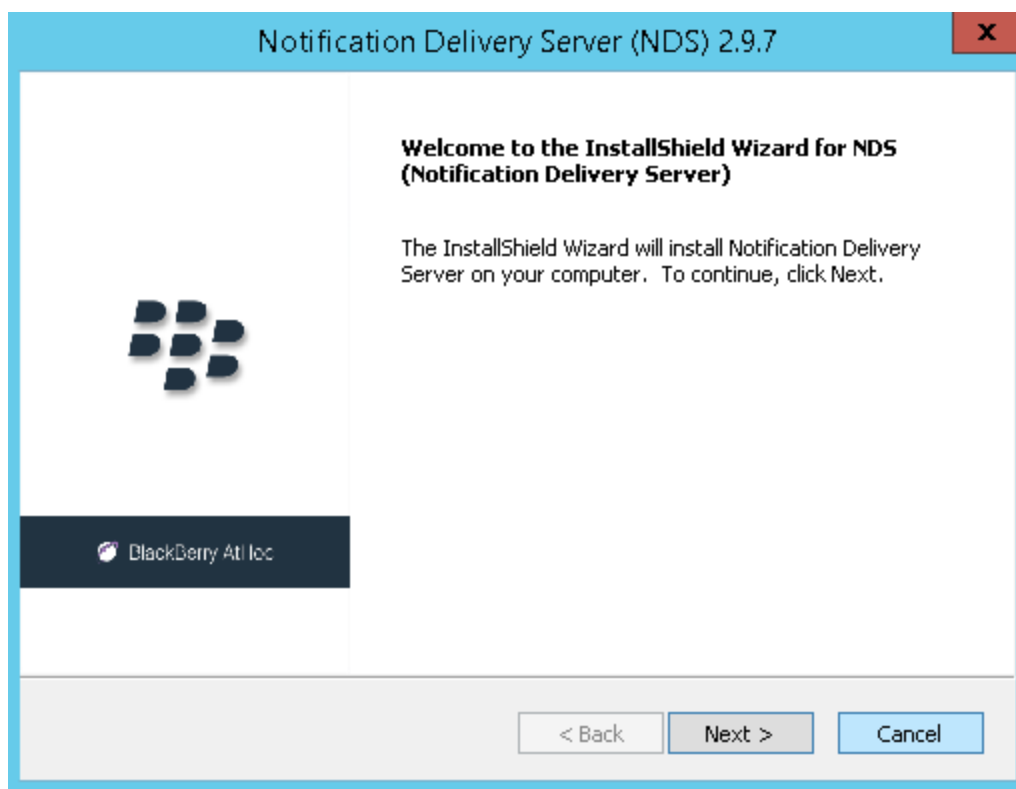
As an installer, you must have the following:

- SQL Server sysadmin and Windows admin rights.

- New database installation requires that the SQL Server service account have permission to write the file system. Ensure the SQL Server service account has that, or change it to Local System account.
- For custom ngad: A password for the "NGAD," the owner of the AtHoc "ng" databases. If ngad user is not created the installer will automatically create ngad login.
- Full control for the directory in which the database installation scripts are located. Right-click on the directory and open the properties to verify.
- Full control of the database directory folder that contains the .ldf, .mdf, and .ndf files. Right-click on the directory and open the properties to verify.
- The database server must be installed first when installing separate application and database servers. When installing both application and database servers on the same machine (a "combo install"), they can be installed at the same time.

To install the NDS, perform the following steps:

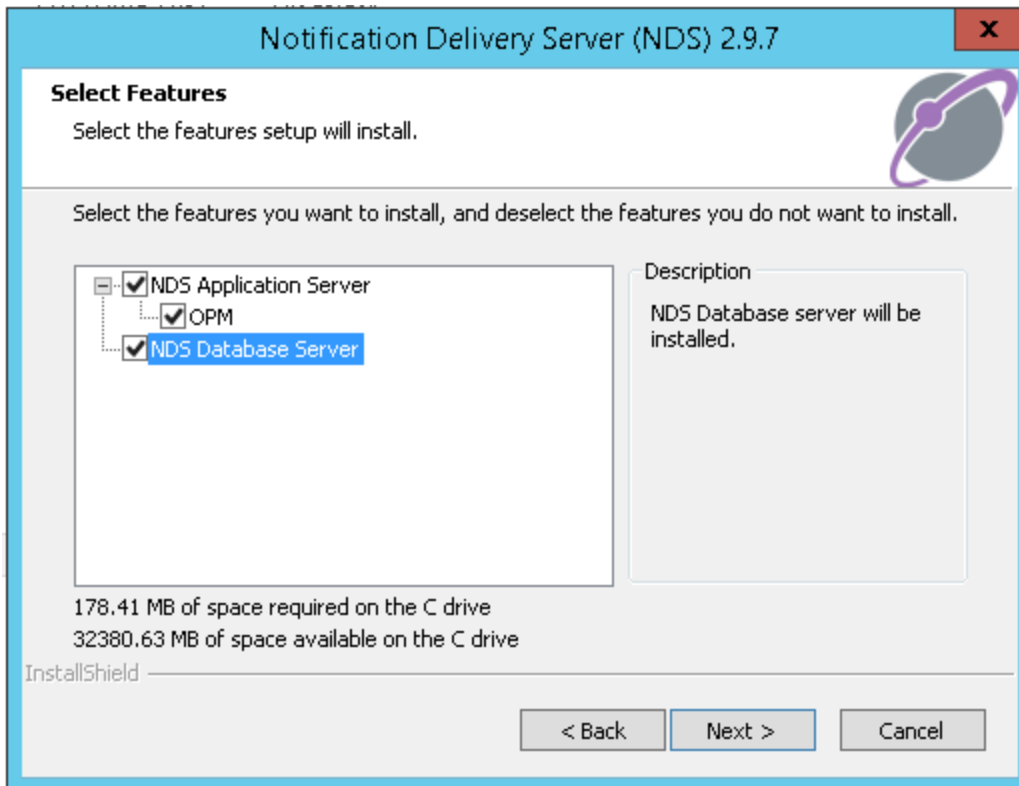
1. Start the installation by double-clicking the setup file.
2. On the welcome screen, click **Next**.



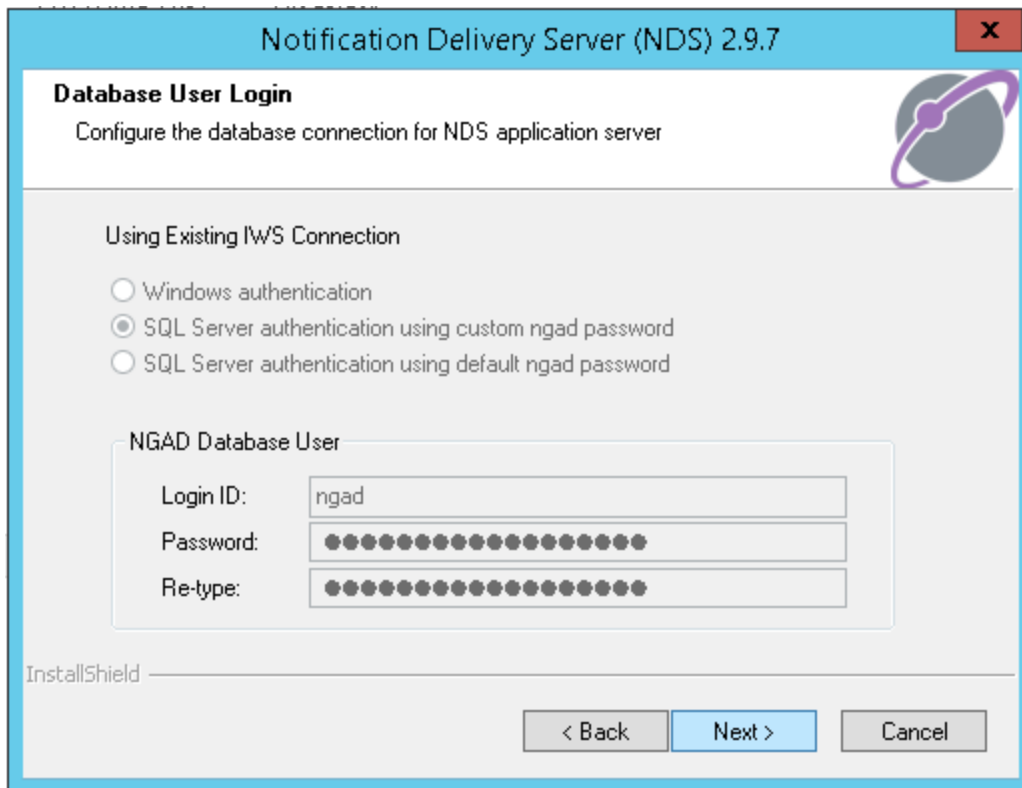
3. Select the features you want to install and click **Next**.
 - **NDS Application Server:** Installs the NDS Application Server.
 - **OPM:** Installs the OPM plug-in.

- **NDS Database Server:** Installs the NDS Database Server.

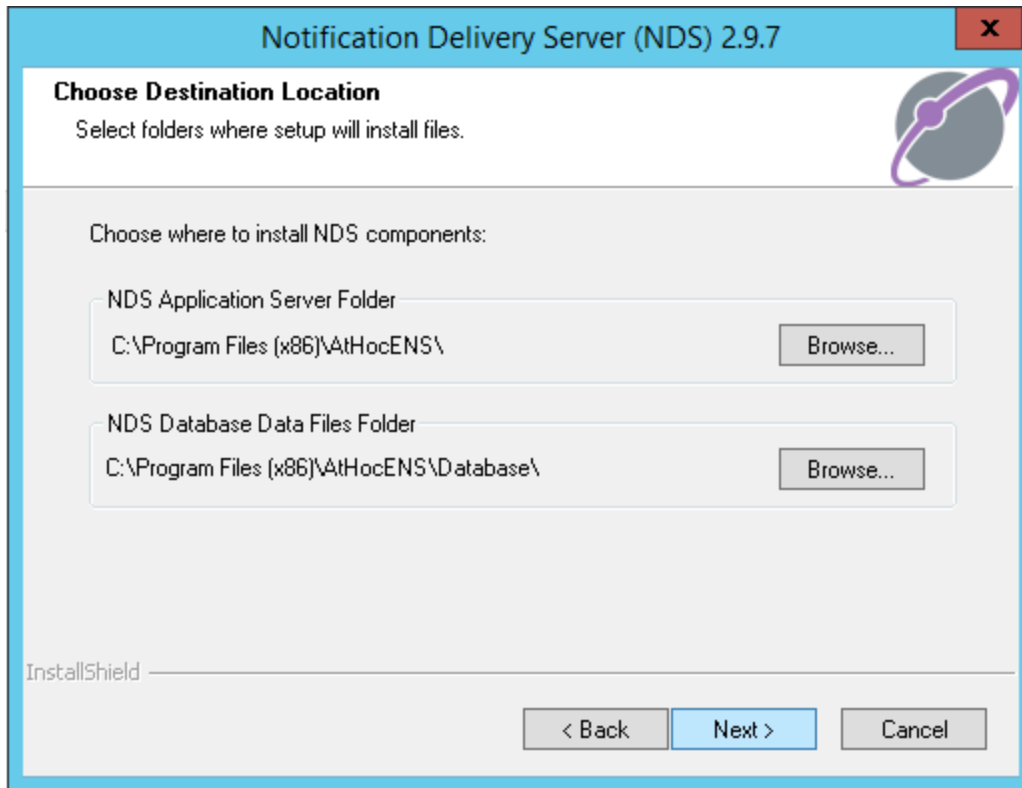
Note: The database server must be installed first when installing separate application and database servers. Do not select the **NDS Database Server** check box if you have already installed the database on a different host.



4. If AtHoc is already installed on the server, the installer will pick the database connection string from AtHocENS registry. Click **Next**.



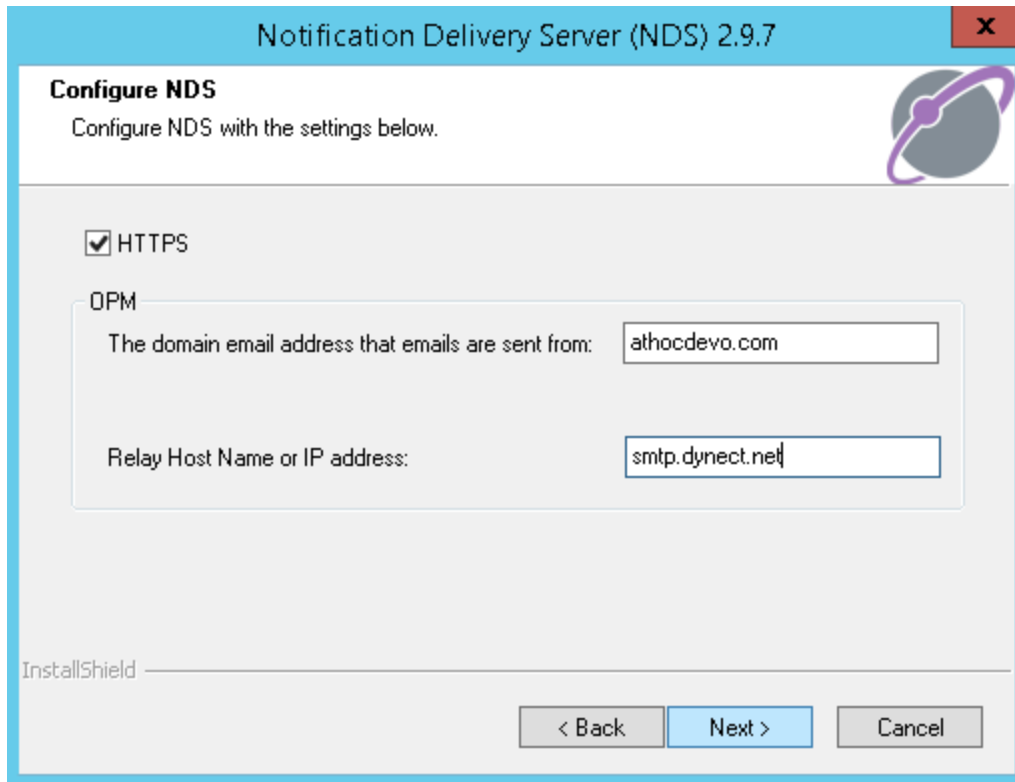
5. Specify the folders to install the NDS components by clicking the associated **Browse** button to specify the NDS Application server folder and the NDS Database data files folder that you want. Or click **Next** to accept the default locations for both folders.



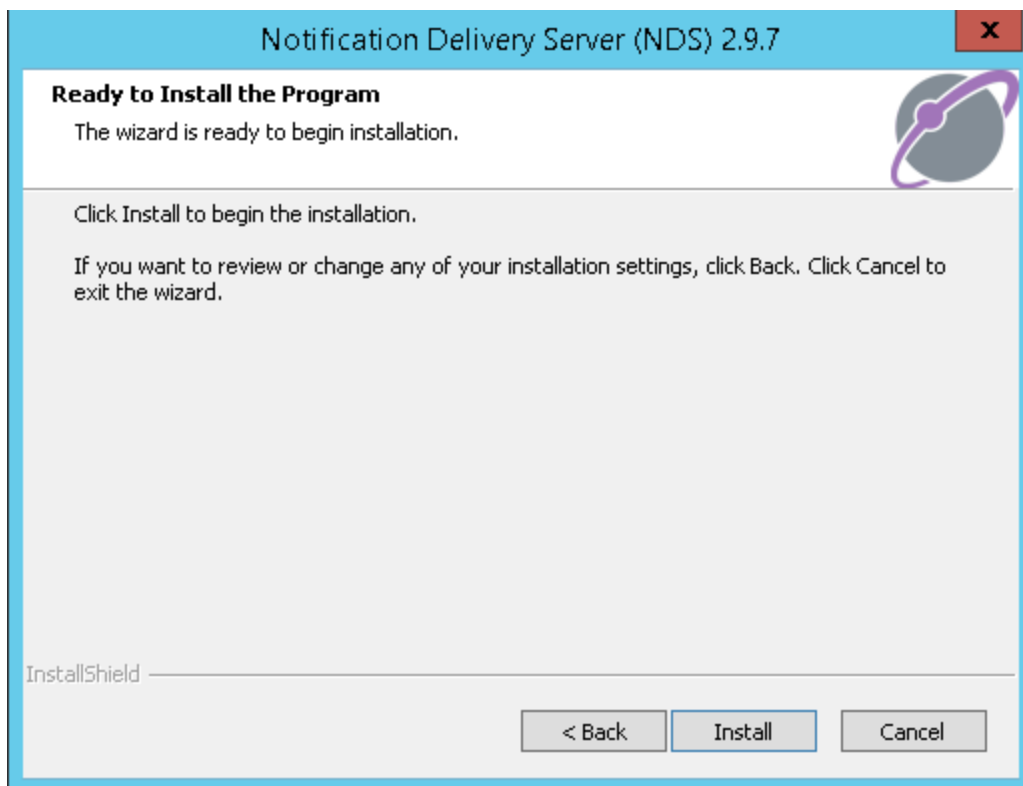
6. Specify the NDS configuration settings:

- Select the HTTPS check box to enable HTTPS.
- Enter the domain email address which will be used to send out email alerts.
- Enter the Relay Host name or IP address of the email server.

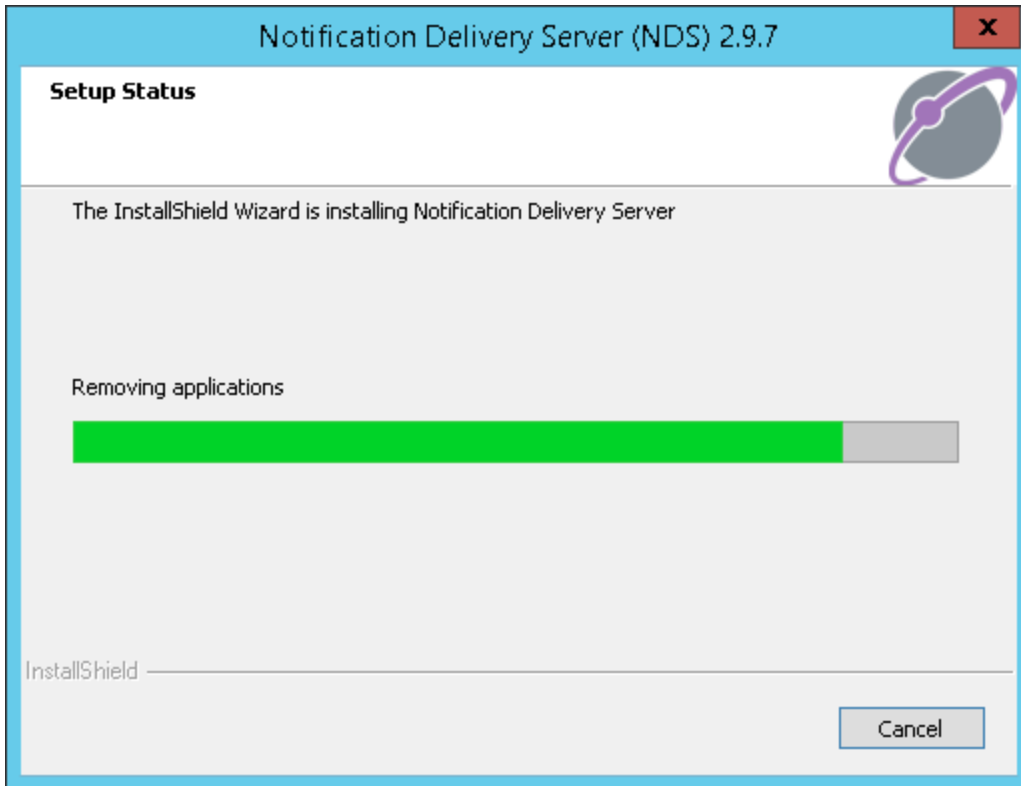
Note: For more information about OPM plug-in configuration keys, refer to [OPM advance settings and configuration](#).



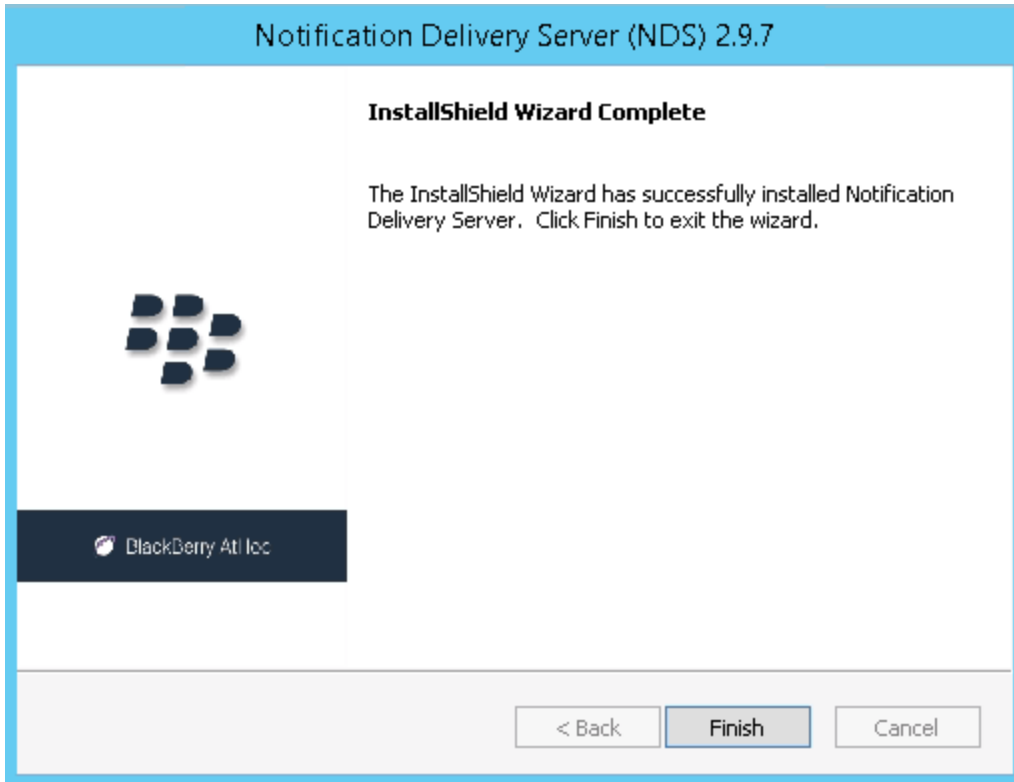
7. Click **Install** to begin the installation or click **Back** to change the installation settings.



8. View the onscreen progress bar to gauge the status of the installation.



9. When the installation completes, click **Finish** to exit the Setup Wizard.



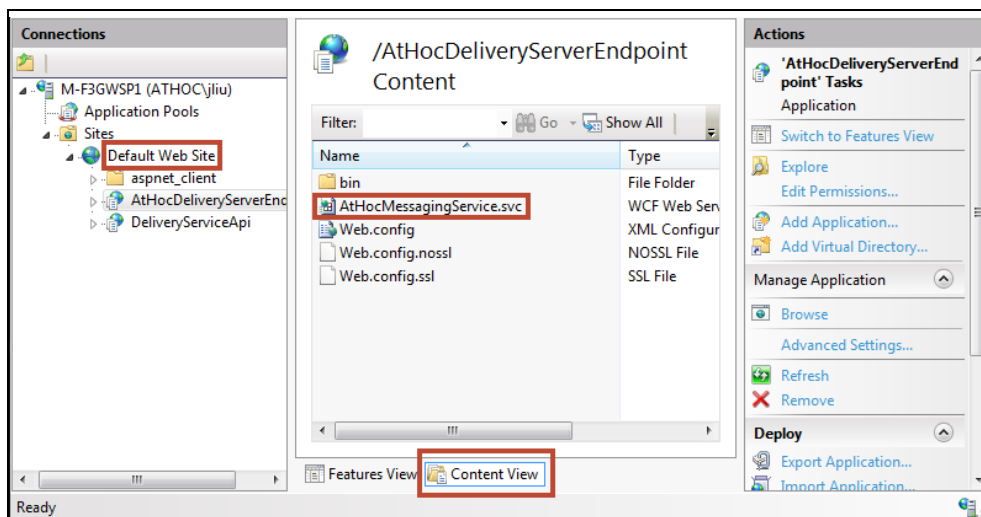
Chapter 5: Verify the installation

You can use the following tasks to verify the installation and configuration of NDS.

Verify the application servers

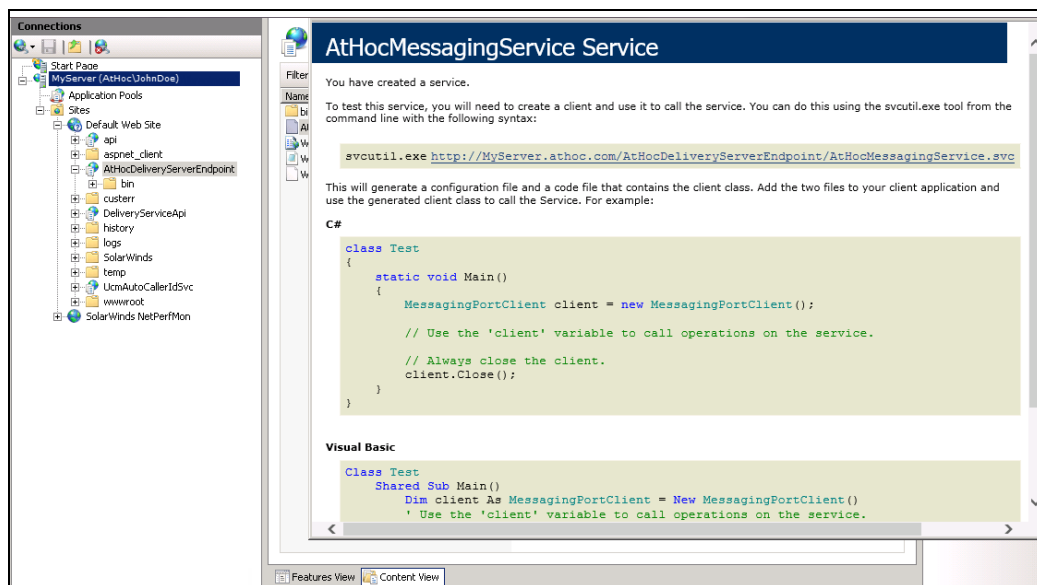
To verify each application server installation, perform the following steps:

1. Open Windows Services and check that the AtHocDeliveryService has started.
2. Check Internet Information Services (IIS):
 - a. Open IIS.
 - b. Verify that the Web site is running:
 1. Go to **Application Pools** and check that **AtHocDeliveryServerEndpoint** and **AtHoc.NDS.Uap** (for NDS V2.8.3 or higher) are started.
 2. Go to **Default Web Site**, open **AtHocDeliveryServerEndpoint** , and select **Content View**.

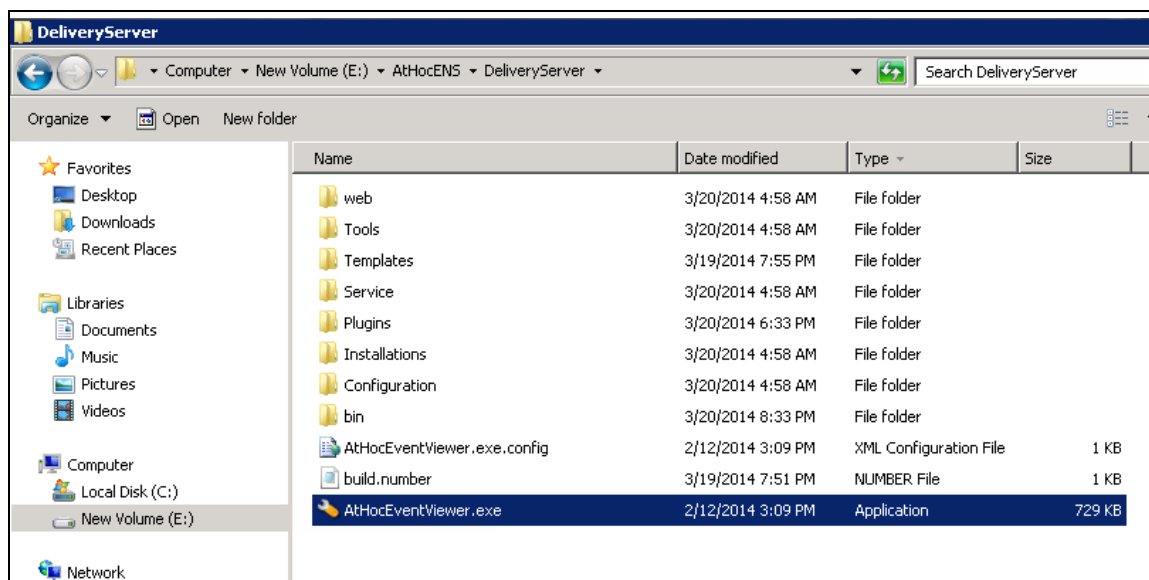


3. Right-click on the **AtHocMessagingService.svc** and select **Browse**.

The following Web page loads without errors.



3. Navigate to **AtHocENS>DeliveryServer**, open the `AtHocEventViewer.exe` and check for errors and warnings.



4. Open the NDS Console and go to the **Testing** tab.
5. Check for databases and devices in the panes on the right. Verify database and device entries.

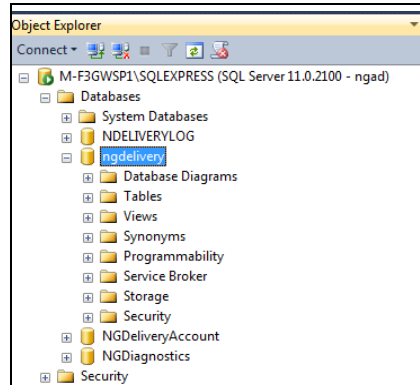
Databases: NGDelivery, and NGDiagnostics.

Devices: based on your configuration, can include Ucm TAS,OPM, and SMS.

Verify the database server

To verify the databases, perform the following steps:

1. Log in to SQL Server Management Studio as the NGAD user.
2. Verify that the NGDeliverylog, NGDelivery, NGDeliveryAccount, and NGDiagnostics exist on the same database server.



3. Check the database directory and verify that there are files for the database installed on the server.
4. Open the ngdelivery database to verify that the Service Broker is enabled:
 - a. Select from the dbo.AsyncSqlQuery table.
 - b. In the query results, check the following values:
 - LastRunOn should be close to the current time
 - LastRunOK should be '1'

ID	ScheduledSql	JobCommName	FirstRunOn	LastRunOn	LastRunOK	IsR
1	408 EXEC usp_DivTask_PostTaskExecution	PostTaskExecution	2015-04-16 15:46:55.887	NULL	0	1
2	409 EXEC usp_DeliveryTrack_AddTracking	AddTracking	2015-04-16 15:46:56.237	NULL	0	1
3	410 EXEC usp_DivTask_SendTerminateMsgtoNDS	Send TerminateMsgtoNds	2015-04-16 15:46:56.243	NULL	0	1
4	411 EXEC usp_DivTask_RestartCycleJob	RestartCycleJob	2015-04-16 15:46:56.250	NULL	0	1
5	412 exec usp_DivTask_TerminateAlertandTask 'R'	TerminateDelivery Task	2015-04-16 15:46:56.257	NULL	0	1
6	413 EXEC usp_DivTask_ReleaseExpired	ReleaseExpiredTask	2015-04-16 15:46:56.263	NULL	0	1
7	414 EXEC usp_OperationAudit_AssignProperties	UpdateOperationAdut	2015-04-16 15:46:56.327	2015-09-30 17:20:32.280	1	1
8	415 EXEC usp_DivTask_CreateNewTask	CreateNewTasks	2015-04-16 15:46:56.333	2015-09-30 17:21:16.453	1	1
9	416 EXEC usp_DivTask_PostTaskExecution	PostTaskExecution	2015-04-16 15:46:57.520	2015-09-30 17:21:16.390	1	1
10	417 EXEC usp_DeliveryTrack_AddTracking	AddTracking	2015-04-16 15:46:57.530	2015-09-30 17:21:16.403	1	1
11	418 EXEC usp_DivTask_SendTerminateMsgtoNDS	Send TerminateMsgtoNds	2015-04-16 15:46:57.540	2015-09-30 17:21:16.457	1	1
12	419 EXEC usp_DivTask_RestartCycleJob	RestartCycleJob	2015-04-16 15:46:57.553	2015-09-30 17:21:16.460	1	1
13	420 exec usp_DivTask_TerminateAlertandTask 'R'	TerminateDelivery Task	2015-04-16 15:46:57.600	2015-09-30 17:21:16.460	1	1
14	421 EXEC usp_DivTask_ReleaseExpired	ReleaseExpiredTask	2015-04-16 15:46:57.657	2015-09-30 17:20:47.990	1	1

5. If the service broker is not enabled, run the following query:

```
alter database RestoreDBName set enable_broker with rollback
immediate
```

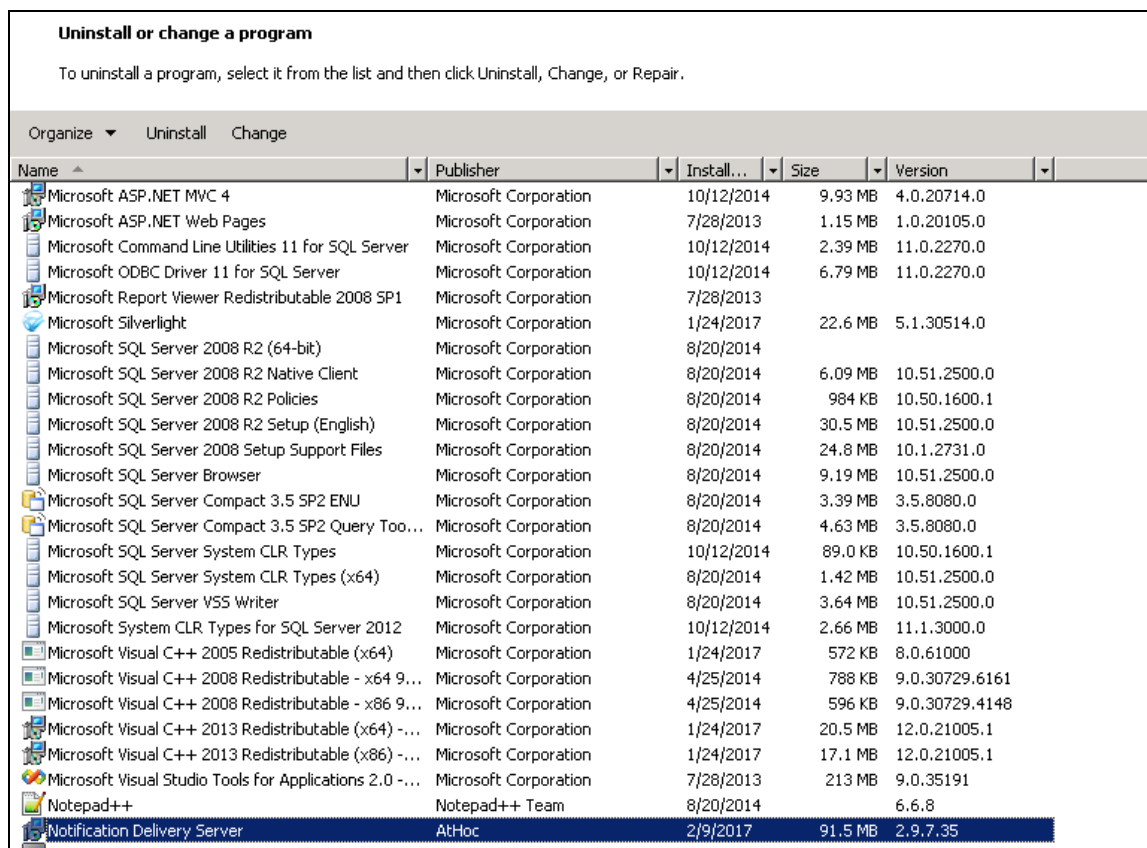
Note: If the Service Broker does not start, run the following script to restore the database:

```
AtHocENS\DeliveryServer\Installations\support\Utils\restore SQL.sql
```

Chapter 6: Uninstall NDS

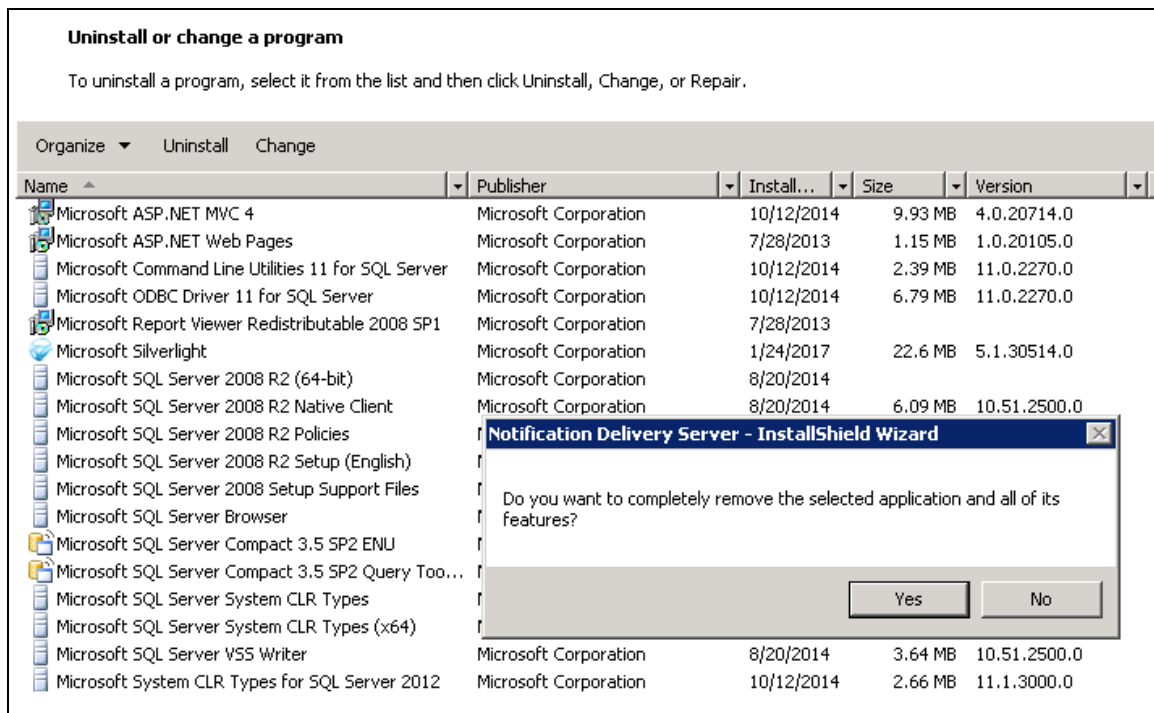
To uninstall the NDS and OPM plug-in, perform the following steps:

1. Click **Start > Control panel > Programs > Programs and Features**.
2. From the list of currently installed programs, select **Notification Delivery System**.



3. Click **Uninstall**.

4. The system displays a confirmation message, click **Yes**.



Chapter 7: OPM advance settings and configuration

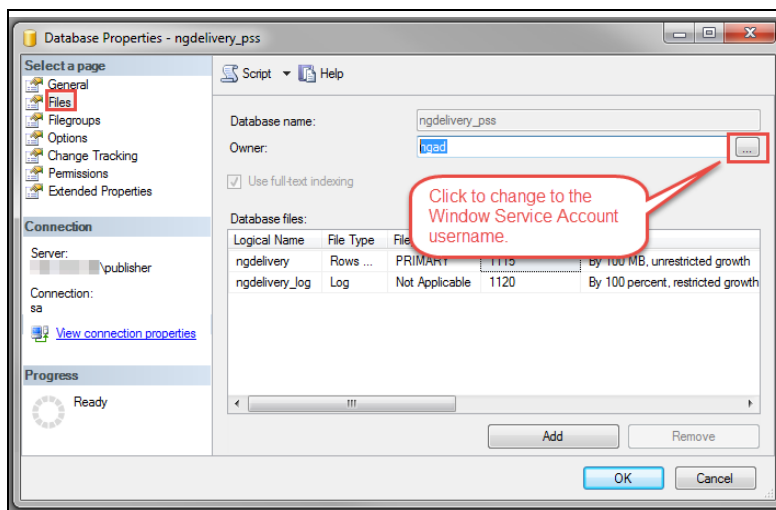
For detailed information about OPM plug-in advance settings and configuration, refer to the following section in the *MSI OPM Configuration Guide*.

- Verify the plug-in installation
- Set up the organization account
- Configure the OPM plug-in for NDS
- Register the NDS on-premise email delivery gateway with BlackBerry AtHoc
- Reference—advanced setup
- Tools for monitoring, troubleshooting, and managing OPM

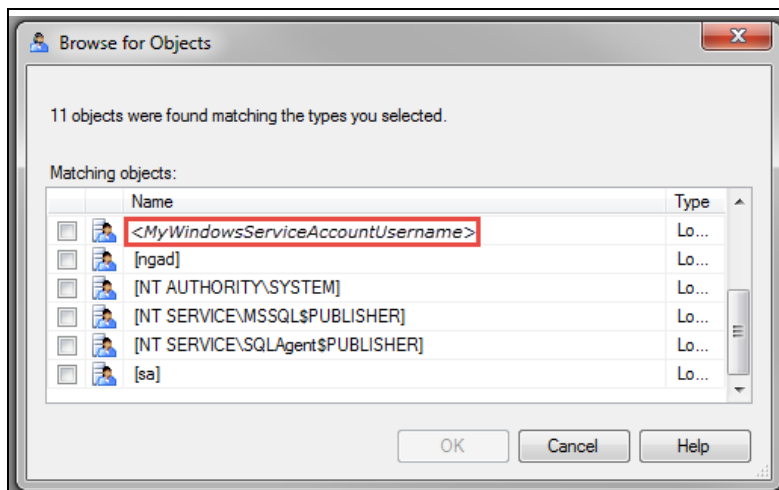
Chapter 8: Configure windows authentication

After installing NDS, you can configure it to use Windows authentication for SQL authentication. To configure Windows authentication, perform the following steps:

1. Create a Windows service account with the following access and privileges:
 - Have SQL access and be the database owner of the three ngdelivery databases
 - Be able to run the athocdelivery service on the NDS server
 - Be able to run the IIS application pools on the NDS service (should be two of them)
 - Have full access to the c:\windows\temp folder
 - Have full access to the folders where the databases reside.
2. Change the owner of the databases from ngad to the Windows service account:
 - a. Open SQL Server Management Studio.
 - b. Expand **Databases**.
 - c. For each ngdelivery database, right click and select **Properties**.
 - d. Click **Files** and click the browse icon to select the username of the Windows service account.



- e. Click **Browse**.
- f. Select the Windows service account username.

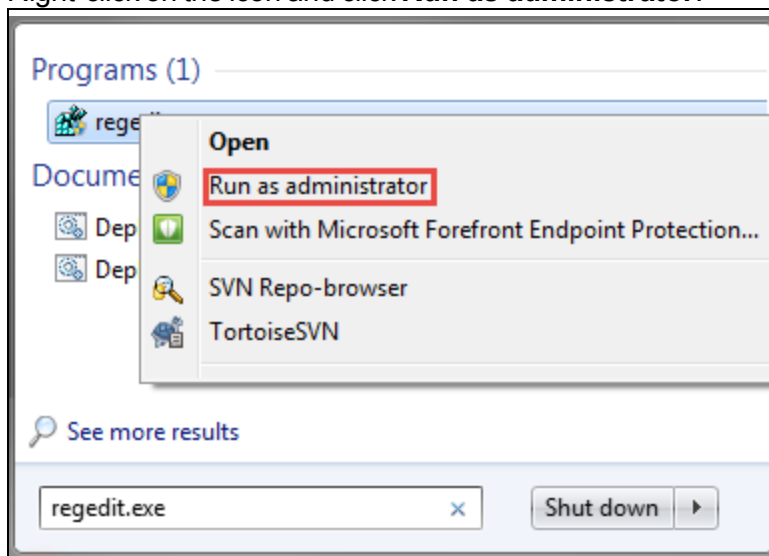


g. Click **OK**.

3. Update the database connection string in the System Registry.

a. Open the Registry:

1. Click **Start** and type `regedit`.
2. Right-click on the icon and click **Run as administrator**.



b. In the Registry navigate to `HKEY_LOCAL_MACHINE > SOFTWARE > Wow6432Node > AtHocServer`.

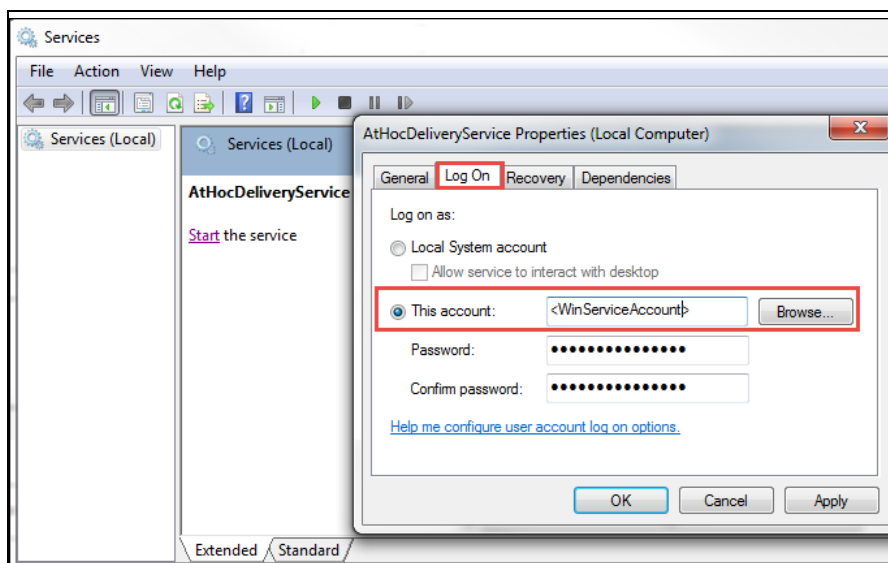
c. Under `AtHocServer` change the values of `OleDbConnectionString`:

d. Delete the SQL login info: `User Id=ngad;Password=<ngadpassword>; Provider=SQLOLEDB;Server=<server\instance>;Initial Catalog=ngadata;User Id=ngad;Password=<ngadpassword>;`

e. Add the Windows authentication parameter: `Integrated Security=SSPI;`

Provider=SQLOLEDB;Server=<server\instance>;Initial Catalog=ngaddata;Integrated Security=SSPI;

- f. Click **OK** and exit `Regedit`.
4. (Optional) For AtHoc authentication through Windows, modify the service login to use the domain account.
 - a. From the database server, click **Start** and open the **Control Panel**.
 - b. Click **System and Security > Administration Tools > Services**.
 - c. Right click on **AtHocDeliveryService** and select **Properties**.



- d. Select the **Log On** tab.
The default setup is "Local System Account".
- e. To modify the account information for SQL Server Windows Authentication, select This Account.
- f. Fill in your Windows Service Account credentials and click **OK**.

Chapter 9: Monitor and maintain the NDS Farm - V2.8.5 or later

The following sections describe how to perform maintenance on the NDS Farm, as well as monitor SQL Server jobs and NDS services, resources, performance, and the delivery lifecycle.

SQL server agent monitoring and maintenance jobs

On each database server, there are jobs that manage the database data and provide monitoring information.

There are two database servers and each has related jobs for the databases that reside there:

- Primary database server: contains the ngdelivery and ngdiagnostics databases
- Logging database server: contains ngdeliverylog database

The following table summarizes the jobs and what information that you can use to monitor the databases.

Job name	Purpose	Database server	Interval	Notes
NDSPurge.Job	Archives and purges history data for the <code>ngdelivery</code> and <code>ngdiagnostic</code> databases.	Primary	Nightly	
TaskHistoryUpdate	Updates the <code>deliverytaskid</code> and other data in the <code>taskHistory</code> table.	Logging	Every 1 minute	If this job stops, usage data will display incorrectly.
LogRealTimeDataPurgeJob	Summarizes task history data in the <code>TaskSummary</code> table.	Logging	Nightly	If this job stops running, task history data is purged after 1 month.
LogHistoryDataPurgeJob	Deletes real time data from the <code>Message</code> , <code>Task</code> , <code>MessageLifeCycle</code> , <code>TaskLifeCycle</code> , and <code>AccessLog</code> tables. Also deletes <code>InboundEvent</code> data older than 4 hours.	Logging	Every 4 hours	
TaskSummaryDataPurgeJob	Deletes task summary data that is older than 2 years. Default: DISABLED	Logging	Manual	OnPremise Installations: Enable this job and change to 1500 the value of <code>PURGE_TASKSUMMARY_THRESHOLD_IN_HOURS</code> in the <code>GLB_Config</code> table.

Monitor NDS

This section lists the NDS services, resources, and performance data that you need to monitor. See the Microsoft Windows Server “Monitor Resource Usage (System Monitor)” guidelines at the Microsoft website.

Monitor the following services:

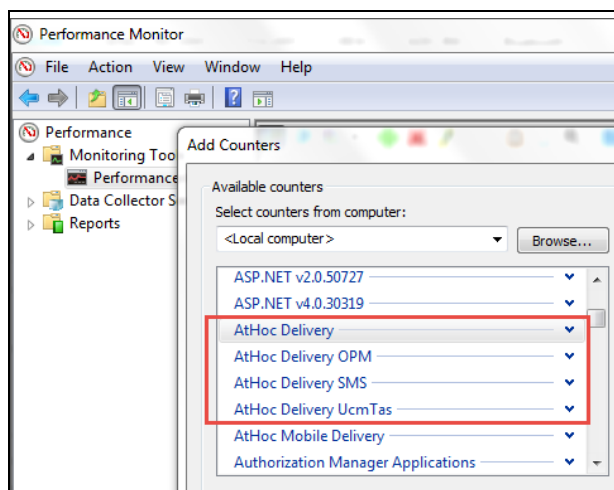
- IIS
- AtHocDeliveryService (Windows)
- Plugin-related services such as ATS for TAS
- SQL Server (instance name)
- SQL Server browser
- SQL Server agent
- Third-party systems such as UCM

Monitor the following resources:

- CPU usage
- Memory usage
- Disk usage
- Network
- Load balancing

Monitor performance counters:

The NDS performance counters are in the BlackBerry AtHoc Delivery group.



- `TTSServiceRunningState`: If TAS is hosted by NDS, indicates the running status of the text-to-speech (TTS) service. Values:

- Running=1
- Stopped=0; in this state, all calls will fail
- `Loop Alert Init/Sec`: Indicates how quickly alert messages are being processed.
Tip: The ideal value is 2. If the value is 0, there are performance issues.
 - If the value is 0 for more than 5 minutes, the NDS platform is not processing alert messages.
 - If the value is 0 for 1 minute, the system is slow. Check the other monitoring counters to identify other problems.
- `Loop Delivery Execution/sec`: Indicates whether the NDS platform is processing tasks.
Tip: The ideal value is 2. If the value is 0, there are processing issues.
 - If the value is 0 for more than 5 minutes, the NDS platform is not processing individual tasks.
 - If the value is 0 for 1 minute, the system is slow. Check the other monitoring counters to identify other problems.
- NDS Delivery Lifecycle Monitoring: Contact BlackBerry AtHoc support to set up this monitoring job.

The life cycle monitor job provides status codes for each alert (task) delivered by NDS and the plug-ins:

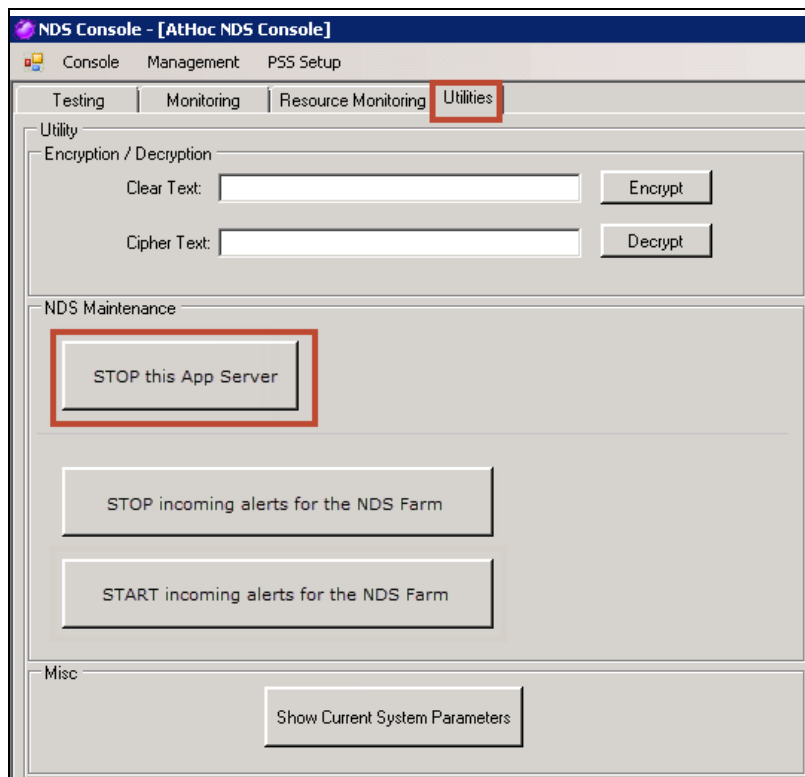
Perform maintenance on the NDS Farm

Starting Release 2.8.5, you can upgrade NDS for NDS plug-ins such as TAS, OPM, or SMS without stopping service. You can also stop alerts for all application servers in the NDS Farm. NDS signals to the plug-in on each application server to stop processing new tasks. And then, one by one, you can upgrade or perform maintenance each application server.

Stop individual application servers

From the NDS Console, stop the application server.

1. Open the NDS Console.
2. Click **Utilities**.



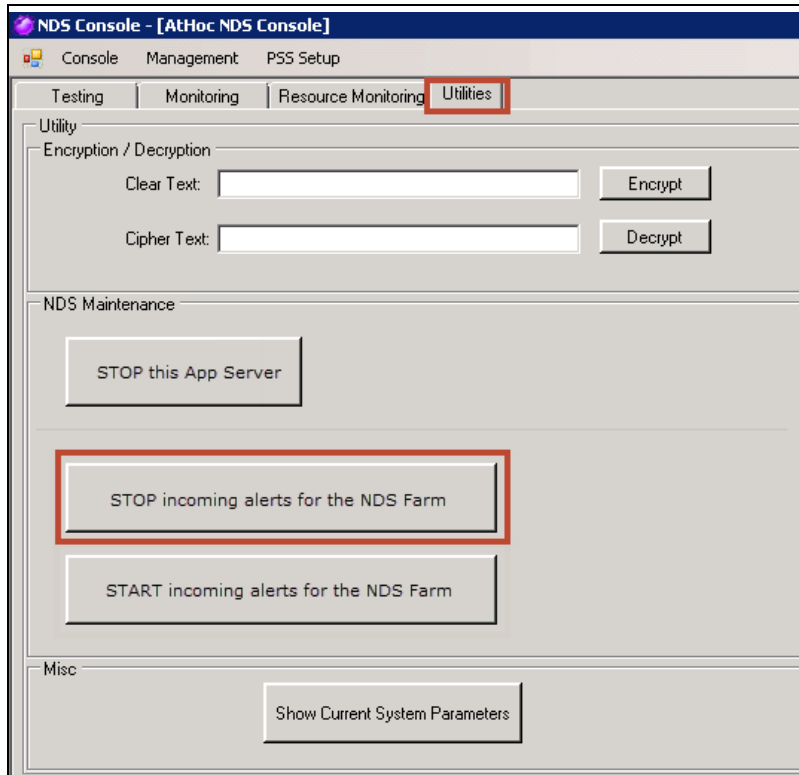
3. Click **Stop this App Server**.

NDS and the installed plug-ins stop processing new tasks on the current server and finish processing all tasks.

Stop and start alerts from the NDS Farm

From the NDS Console, stop alerts for the NDS farm before shutting down NDS and plug-in services.

1. Open the NDS Console.
2. Click **Utilities**.



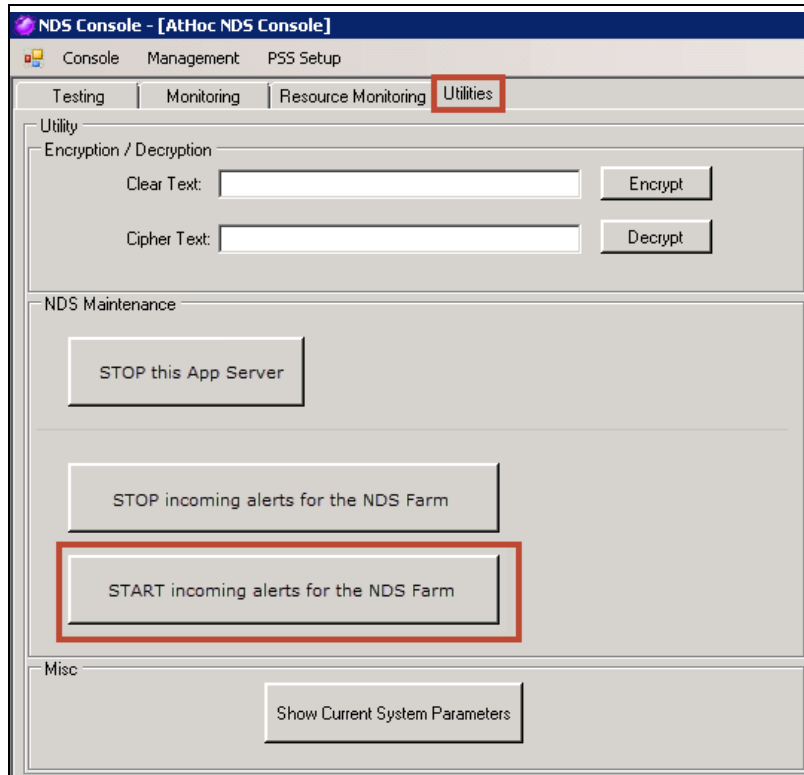
3. Click **Stop incoming alerts for the NDS Farm**.

All NDS application servers start rejecting all incoming alert messages. However, report and terminate messages are still accepted.

Note: Wait until existing alerts are processed and tracking data is returned before you shut down all the NDS and plug-in services.

After you verify the upgrade, restart alerts for the NDS Farm.

1. Open the NDS Console.
2. Click **Utilities**.



3. Click **START incoming alerts for the NDS Farm**.

Chapter 10: Glossary

- **BlackBerry AtHoc Management System**

The web-based interface, and its required components, used for configuring and managing alerts, users, devices, and settings for BlackBerry AtHoc alerting. Formerly known as IWSAlerts or the IWS Management System.

- **AtHoc Server**

The server on which the BlackBerry AtHoc management system and related tools are installed. Also called the BlackBerry AtHoc Application Server. Formerly known as IWS Server or just IWS.

- **NDS**

Notification Delivery Service. The delivery service that processes and delivers alert messages from the hosted services (plug-ins) and mobile alerting.

- **NDS Application Server**

A server that hosts the delivery plug-ins, such as TAS, OPM, and SMS. Called the “application server” in this guide.

- **NDS Console**

The user interface for configuring and managing the NDS plug-ins, accounts, and settings.

- **NDS Database Server**

A server on which the NDS databases are located. Called the “database server” in this guide.

- **NDS Farm**

The set of application servers managed by NDS.