



BlackBerry AtHoc

MSI Notification Delivery Service OPM Installation Guide

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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 with the latest release.

Verify installation prerequisites

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

Hardware requirements

- 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 a standalone server set up, limit SQL RAM usage to 80-85% of the total system RAM.
- For combination 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

- 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 Microsoft 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
- Each NDS instance must have a dedicated SQL server instance. Multiple plug-ins (TAS, OPM, or SMS) cannot be installed on the same NDS instance.
- BlackBerry AtHoc release 6.1.8.85 or later release

Required when installing the application server in combination mode. Combination mode is used when the BlackBerry 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 administrator 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 IISUSR 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 Microsoft SQL Server:
 - SA account must be a sysadmin account
 - 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.

Deployment mode and requirements

There are 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 the BlackBerry AtHoc management system is also installed on the same application server. To learn about installing BlackBerry AtHoc management system, see the [BlackBerry AtHoc Installation and Configuration Guide](#).

The following table describes the required components for stand alone and combined mode. It is important to plan the installation or upgrade knowing which components are included.

Component	Stand alone	Combined with BlackBerry AtHoc
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 in stand alone mode.

Install NDS components for stand alone mode

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

Install NDS

Installation user account prerequisites:

As an installer, you must have the following:

- Microsoft SQL Server sysadmin and Windows administrator rights.
- New database installation requires that the Microsoft SQL Server service account have permission to write the file system. Ensure the Microsoft 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 the ngad user is not created, the installer will automatically create the ngad login.
- Full control for the directory where 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 server (a "combo install"), they can be installed at the same time.

1. Start the installation by double-clicking the setup file.

2. On the **Welcome** screen, click **Next**.

3. On the **Select Features** screen, 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. On the **Database Server** screen, use the default database server or click **Browse** to locate the database server installed on the remote server.

5. In the **Connect using:** section, choose the authentication mode from the following options 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. Click **Next**.

7. On the **Database User Login** screen, choose one of the following options and click **Next**.

- **SQL server authentication using custom ngad password:** Enter ngad username and a password for each Microsoft 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.

8. On the **Choose Destination Location** screen, 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.
9. On the **Configure NDS** screen, specify the NDS configuration settings:
 - Select the HTTPS check box to enable HTTPS.
 - Enter the domain email address to send email alerts to.
 - Enter the Relay Host name or IP address of the email server.

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

 - Click **Next**.
10. On the **Ready to Install the Program** screen, click **Install** to begin the installation or **Back** to change the installation settings.
11. On the **Setup Status** screen, view the progress bar to gauge the status of the installation.
12. When the installation completes, on the **InstallShield Wizard Complete** screen, click **Finish**.

Install NDS components in combined mode

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

Install NDS

Installation user account prerequisites:

As an installer, you must have the following:

- Microsoft SQL Server sysadmin and Windows admin rights.
- A new database installation requires that the Microsoft SQL Server service account have permission to write the file system. Ensure the Microsoft SQL Server service account has that, or change it to a Local System account.
- For custom ngad: A password for the "NGAD," the owner of the AtHoc "ng" databases. If a 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.

1. Start the installation by double-clicking the setup file.
2. On the **Welcome** screen, click **Next**.
3. On the **Select Features** screen, 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. On the **Database User Login** screen, if AtHoc is already installed on the server, the installer will pick the database connection string from AtHocENS registry. Click **Next**.
5. On the **Choose Destination Location** screen, 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. On the **Configure NDS** screen, specify the NDS configuration settings:
 - Select the HTTPS check box to enable HTTPS.
 - Enter the domain email address to send email alerts to.
 - Enter the Relay Host name or IP address of the email server.
 - For more information about OPM plug-in configuration keys, see [OPM advanced settings and configuration](#).
7. On the **Ready to Install the Program** screen, click **Install** to begin the installation or click **Back** to change the installation settings.
8. On the **Setup Status** screen, view the onscreen progress bar to gauge the status of the installation.
9. On the **InstallShield Wizard Complete** screen, when the installation completes, click **Finish**.

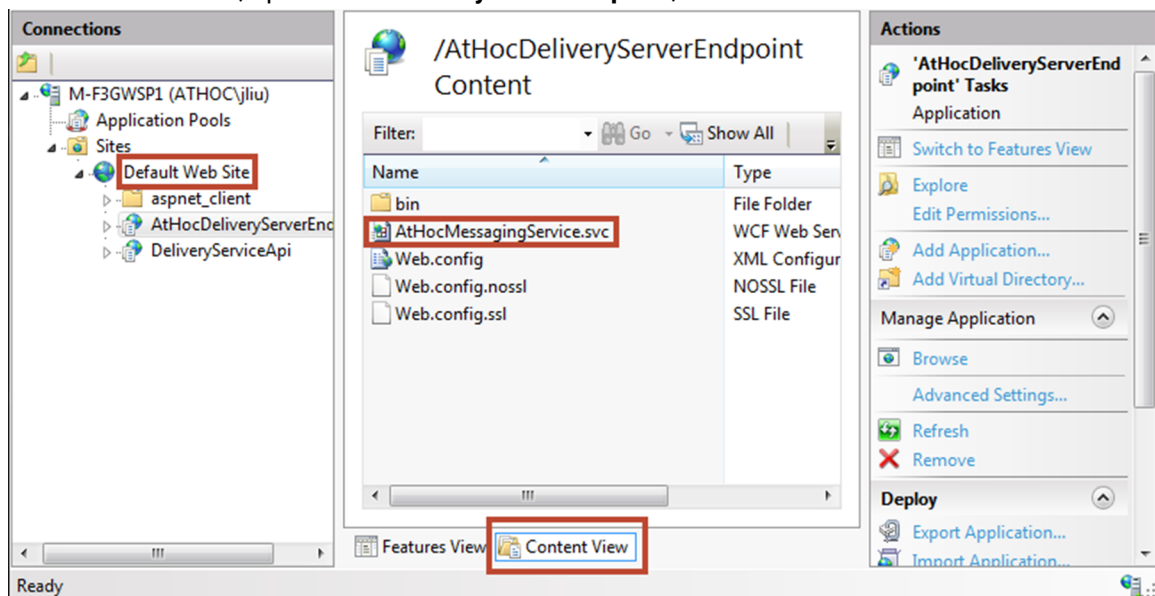
Verify the installation

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

Verify the application servers

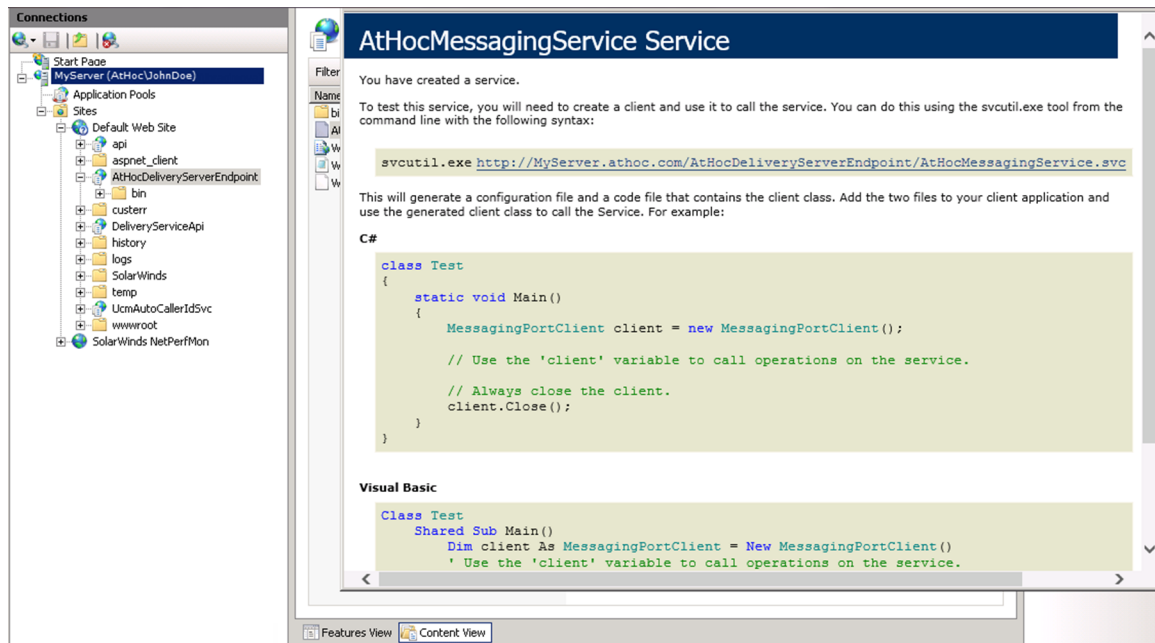
To verify each application server installation, perform the following steps:

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 **AtHocMessagingService.svc** and select **Browse**.

The following Web page loads without errors:



4. Navigate to **AtHocENS > DeliveryServer**, open the `AtHocEventViewer.exe` and check for errors and warnings.
5. Open the NDS Console and go to the **Testing** tab.
6. 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, devices can include Ucm TAS, OPM, and SMS.

Verify the database server

1. Log in to Microsoft 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'

Results		Messages					
	ID	ScheduledSql	JobCommName	FirstRunOn	LastRunOn	LastRunOK	IsR
1	408	EXEC usp_DlvTask_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_DlvTask_SendTerminateMsgtoNDS	SendTerminateMsgtoNds	2015-04-16 15:46:56.243	NULL	0	1
4	411	EXEC usp_DlvTask_RestartCycleJob	RestartCycleJob	2015-04-16 15:46:56.250	NULL	0	1
5	412	exec usp_DlvTask_TerminateAlertandTask ",R"	TerminateDeliveryTask	2015-04-16 15:46:56.257	NULL	0	1
6	413	EXEC usp_DlvTask_ReleaseExpired	ReleaseExpiredTask	2015-04-16 15:46:56.263	NULL	0	1
7	414	EXEC usp_OperationAudit_AssignProperties	UpdateOperationAduit	2015-04-16 15:46:56.327	2015-09-30 17:20:32.280	1	1
8	415	EXEC usp_DlvTask_CreateNewTask	CreateNewTasks	2015-04-16 15:46:56.333	2015-09-30 17:21:16.453	1	1
9	416	EXEC usp_DlvTask_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_DlvTask_SendTerminateMsgtoNDS	SendTerminateMsgtoNds	2015-04-16 15:46:57.540	2015-09-30 17:21:16.457	1	1
12	419	EXEC usp_DlvTask_RestartCycleJob	RestartCycleJob	2015-04-16 15:46:57.553	2015-09-30 17:21:16.460	1	1
13	420	exec usp_DlvTask_TerminateAlertandTask ",R"	TerminateDeliveryTask	2015-04-16 15:46:57.600	2015-09-30 17:21:16.460	1	1
14	421	EXEC usp_DlvTask_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.`

Uninstall the NDS and the OPM plug-in

1. Click **Start > Control panel > Programs > Programs and Features**.
2. From the list of currently installed programs, select **Notification Delivery Server**.
3. Click **Uninstall**.
4. On the confirmation message, click **Yes**.

OPM advanced settings and configuration

For detailed information about OPM plug-in advanced settings and configuration, refer to the following sections in the *BlackBerry AtHoc MSI OPM Installation and Configuration Guide* :

- [Verify the plug-in installation](#)
- [Set up the organization account](#)
- [Configure the OPM plug-in for NDS](#)
- [Register the NDS email delivery gateway with BlackBerry AtHoc](#)
- [Set up advanced OPM plug-in features](#)
- [Tools for monitoring, troubleshooting, and managing OPM](#)

Configure Windows authentication

After installing NDS, you can configure it to use Windows authentication for SQL authentication.

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. There should be two application pools.
 - 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 Microsoft SQL Server Management Studio.
 - b. Expand **Databases**.
 - c. For each ngdelivery database, right click and select **Properties**.
 - d. On the **Database Properties** window, click **Files** and click the browse icon to select the username of the Windows service account.
 - e. Click **Browse**.
 - f. On the **Browse for Objects** window, 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 the regedit 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:
 - Delete the SQL login info: `User Id=ngad;Password=<ngadpassword>;`

```
Provider=SQLOLEDB;Server=<server\instance>;Initial Catalog=ngaddata;User Id=ngad;Password=<ngadpassword>;
```
 - Add the Windows authentication parameter: `Integrated Security=SSPI;`

```
Provider=SQLOLEDB;Server=<server\instance>;Initial Catalog=ngaddata;Integrated Security=SSPI;
```
 - Click **OK** and exit Regedit.
 - d. Optionally, for AtHoc authentication through Windows, modify the service login to use the domain account.
 1. From the database server, click **Start** and open the **Control Panel**.
 2. Click **System and Security > Administration Tools > Services**.
 3. Right click **AtHocDeliveryService** and select **Properties**.
 4. On the **AtHocDeliveryServices Properties** window, select the **Log On** tab.

The default setup is "Local System Account".
 5. To modify the account information for Microsoft SQL Server Windows Authentication, select **This Account**.
 6. Fill in your Windows Service Account credentials and click **OK**.

Monitor and maintain the NDS Farm

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.

Microsoft 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_<plug-in>` and `ngdiagnostics` databases.
- Logging database server: contains `ngdeliverylog` database.

The following tables summarize the jobs and what information that you can use to monitor the databases.

NDS Purge.Job

Purpose	Database server	Interval	Notes
Archives and purges history data for the <code>ngdelivery_<plug-in></code> and <code>ngdiagnostic</code> databases.	Primary	Nightly	—

TaskHistoryUpdate

Purpose	Database server	Interval	Notes
Updates the <code>deliverytaskid</code> and other data in the <code>taskHistory</code> table.	Logging	Every one minute	If this job stops, usage data will display incorrectly.

LogRealTimeDataPurgeJob

Purpose	Database server	Interval	Notes
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

Purpose	Database server	Interval	Notes
Deletes real time data from the Message, Task, MessageLifeCycle, TaskLifeCycle, and AccessLog tables. Also deletes InboundEvent data older than 4 hours.	Logging	Every 4 hours	—

TaskSummaryDataPurgeJob

Purpose	Database server	Interval	Notes
Deletes task summary data that is older than 2 years.Default: DISABLED.	Logging	Manual	OnPremises Installations: Enable this job and change to 1500 the value of PURGE_TASKSUMMARY_THRESHOLD_IN_HOURS in the GLB_Config 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)
- Plug-in-related services such as ATS for TAS
- Microsoft SQL Server (instance name)
- Microsoft SQL Server browser
- Microsoft 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.

Stop and start alerts from the NDS farm

To stop alerts for the NDS farm before shutting down NDS and plug-in services, complete the following steps:

1. Open the NDS console.
2. Click **Utilities**.
3. In the **NDS Maintenance** section, 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. In the **NDS Maintenance** section, click **START incoming alerts for the NDS Farm**.

Perform maintenance on the NDS Farm

Starting the 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 on each application server.

Stop individual application servers

1. Open the NDS console.
2. Click **Utilities**.
3. In the **NDS Maintenance** section, click **STOP this App Server**.

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

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.

- **BlackBerry AtHoc server**

The server on which the BlackBerry AtHoc management system and related tools are installed. Also called the 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.
- **NDSconsole:** 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.

BlackBerry AtHoc Customer Support Portal

BlackBerry AtHoc customers can obtain more information about BlackBerry AtHoc products or get answers to questions about their BlackBerry AtHoc systems through the Customer Support Portal:

<https://support.athoc.com>

The BlackBerry AtHoc Customer Support Portal also provides support via computer-based training, operator checklists, best practice resources, reference manuals, and user guides.

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