

NCache Release Notes

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Release Notes NCache 5.3 SP3

Tuesday, Feb 01, 2024

Introduction

NCache 5.3 SP3 contains some very important enhancements and bug fixes.

New Features:

1. OutProc Server-Side Code Execution Model

In NCache 5.3 SP3, a significant advancement has been made in server-side code execution with the introduction of the NCache Execution Service. This service represents a unified execution model that has been implemented in both the Java and .NET editions of NCache.

For the Java edition, this separate execution process, the NCache Execution Service, is responsible for running server-side user code, including Cache Loader, Refresher, Readthrough, and Writethrough operations. This change streamlines the execution of server-side code, ensuring efficient and consistent operation across the Java platform.

In the .NET edition, the NCache Execution Service has been similarly adapted but is specifically designated for the Cache Loader and Refresher code execution. This enhancement in the .NET edition aligns with the execution model's overall objective to optimize and standardize server-side code execution processes.

2. Java Client Cache Architecture Synchronization with .NET

The Java client cache architecture has been synchronized with the .NET client cache architecture. This synchronization includes the implementation of Readthrough and Writethrough mechanisms in the Java client cache, as well as enhanced synchronization between L1 and L2 caches. This alignment ensures consistency and efficiency across different platforms.

3. Improvements in NCache Management Center

The NCache Management Center sees notable improvements, including the ability to download log files. This new feature adds a layer of convenience for users managing cache servers. Additionally, the capability to start, stop, and restart services for NCache Service, NCache Execution Service and NCache Bridge Service has been added, enhancing administrative control and flexibility.

4. Enhancements in Export-CacheConfiguration Command

The Export-CacheConfiguration command has undergone enhancements to improve the folder structure for exported cache configurations. It now includes an option to incorporate server-side feature deployments in exports, providing a more comprehensive configuration management capability. Moreover, the specification of a cache name for exports has been made mandatory, ensuring clearer and more precise configuration exports.

Upon creation of a cache using the exported configuration, NCache automatically deploys the required libraries along with the configuration.

5. Automatic Deployment of Server-Side Providers Upon Node Addition

An enhancement has been introduced to streamline the process of adding nodes to a cache cluster in NCache. Users no longer need to manually deploy server-side providers for features such as Readthrough, Writethrough, or Cache Startup Loader on each new node added to an existing cluster.

With the Automatic Deployment feature, NCache automatically deploys the necessary server-side providers for configured features when a new node is added to the cluster. This automation simplifies the process and ensures that new nodes are fully equipped to participate in the cache cluster without requiring manual intervention from users.

6. All-in-One Docker Image for NCache Server and Developer Editions

NCache 5.3 SP3 introduces a significant enhancement in the registration process, particularly for Docker instances. Previously, only a server image was available on DockerHub for NCache, and users seeking a Developer installation had to create their own Docker images. With the new update, a single published image on DockerHub can now be used flexibly for either Server or Developer installations. This improvement greatly simplifies the process for users working with Docker.

During the registration of a Docker instance, users must specify the installation type using the `-RegisterAs` parameter. This parameter allows users to choose from 'CacheServer', 'RemoteClient', and 'Developer' modes, with 'CacheServer' being the default. If the `-RegisterAs` parameter is not specified, the system assumes a Server installation by default. This enhancement not only brings convenience but also provides flexibility in configuring Docker instances according to specific requirements.

7. NCache Client Connection Routing via Load Balancer

In NCache 5.3 SP3, a new feature has been introduced to facilitate NCache clients connecting to cache servers through a load balancer. This feature is particularly relevant in scenarios where direct knowledge of cache servers by the clients is not feasible, such as in environments using Kubernetes clusters or cloud subscriptions with restricted access (like Azure or AWS using Private Links).

Traditionally, NCache architecture requires each client to establish a connection with each cache server. However, when a load balancer is introduced into this architecture, it obscures the direct visibility of individual cache servers from the clients. To address this, NCache 5.3 SP3 implements a mechanism where, upon the client's initial connection to the first cache server via the load balancer, the server shares information about the other cache servers in the configuration.

The client, upon receiving this information, begins to attempt connections to the other servers through the load balancer. This process continues until connections with all servers are established or until a configured number of attempts have been exhausted. This approach ensures that the client can maintain a complete connection with the cache cluster, even in the absence of direct visibility to each server.

8. .NET Framework Compatibility Changes

This release discontinues support for .NET 4.6.1 and earlier versions, reflecting ongoing updates to technology standards. The minimum supported .NET client version is now .NET 4.6.2.

9. TLS Support for Java Client

Enhanced security has been integrated into the Java client through TLS support.

10. Integration with Hibernate and Spring

Direct integration with the latest versions of Hibernate and Spring is now provided, streamlining the integration process. Previously, this integration was only available through JCache interface.

11. Spring Sessions Support

Efficient session management for Spring-based web applications has been introduced, enhancing the functionality of NCache in these environments.

12. Change in Free Trial Duration

Previously, NCache offered a 60-day Free Trial period. However, this duration has been reduced to 30 days in the latest update (5.3 SP3). Despite this change, customers still have the option to extend their evaluation period by contacting the sales team. Upon request, the sales team can provide extension keys that allow customers to extend their NCache evaluation period up to 120 days.

List of Bugs Fixed

[744223](#) FIX: Excessive thread creation on cache servers due to high number of clients.

[744224](#) FIX: User authentication is failing with certain LDAP configurations.

[744225](#) FIX: Client never reconnects with the cache server that was not accessible at the time of cache initialization.

Release Notes NCache 5.3 SP2

Tuesday, Oct 03, 2023

Introduction

NCache 5.3 SP2 contains some very important bug fixes and enhancements.

New Features:

13. Credential Caching

We have introduced Credential Caching in this release to enhance the performance and efficiency of authentication operations in the system. It provides a caching layer on top of the existing security provider, reducing the need for repetitive authentication calls to the underlying authentication system (such as LDAP or Active Directory).

Following are some enhancements made in this release:

a) Caching of User Credentials

User credentials (username and encrypted password) are cached in memory upon successful authentication against the LDAP / Active Directory server. This eliminates the need for reauthentication in subsequent requests by multiple clients for the same user.

Credential caching improves NCache performance by reducing expensive trips to the LDAP/Active Directory servers. It also reduces load on your LDAP/Active Directory servers in a high transaction environment where NCache usually lives.

The user experience is the same as before for specifying NCache security.

b) Caching Enabled/Disabled thru Configuration File

By default, the Credential Caching feature is enabled but you can easily turn it off through a config file change. The '*NCacheServer.EnableCredentialCaching*' flag in the NCache service configuration file enables/disables this feature.

14. TLS Between Server Nodes

NCache now extends its TLS Encryption capabilities to secure communication not only between clients and servers but also between server nodes. While NCache previously offered TLS Encryption for client-server communication, this enhancement focuses on securing data exchange among server nodes within the cluster. This added layer of encryption ensures that all data transmitted between server nodes remains confidential and protected from potential threats, enhancing the overall security of your distributed caching environment.

15. TLS Across Bridge Communication:

NCache introduces TLS Encryption support for communication across bridge connections. With this feature, NCache ensures that data transmitted between cache clusters connected via bridges is encrypted and secured. This enhancement secures the data flowing through bridge connections, adding an extra

layer of protection to your distributed caching infrastructure. It's worth noting that NCache had previously offered TLS Encryption for client-server communication, and this expansion now covers bridge connections as well.

16. Support for Certificates in the Personal Store

In this release, we have enhanced our security protocol support by introducing the capability to place NCache certificates not only in the Trusted Root store, but also in the Personal ('My') store. This enhancement will allow for smoother operations in environments where group policy permission restrictions may affect the storage of certificates in the Root store.

For a smooth operation, it is essential that certificates are issued by a well-known public Certificate Authority (CA), which is inherently trusted by most systems. This allows client machines to validate the server's certificate without requiring the CA certificate to be installed in their Trusted Root store.

However, for private CAs, the CA's certificate must be installed in the Trusted Root store on all participating machines to allow successful validation and secure communication.

17. Combined Node and Cache Security

NCache introduces the ability to seamlessly combine node and cache security for enhanced control and flexibility. With this feature, when node security is enabled, all caches on the respective node are automatically secured. Node administrators have comprehensive control over both cache data and node management tasks. On the other hand, cache users can be specifically associated with individual secured caches, granting them access solely to cache-related operations through NCache APIs. This combination empowers administrators to tailor access permissions, ensuring that cache users have limited access to cache APIs, while node administrators have broader access encompassing both API interactions and management operations.

18. Group-Based Authorization

NCache introduces the ability to enhance your security configuration by allowing group-based authorization. Now, you can easily add LDAP groups as node administrators or cache users, simplifying the management of permissions across your NCache cluster. This feature streamlines the process of authorizing multiple users within an organization by granting group access to cache nodes and caches.

19. Upgraded Active Directory Provider

NCache has upgraded its LDAP provider for Windows based servers to leverage the enhanced authentication and authorization capabilities provided by the more recent implementation of LDAP offered by Microsoft. Explore the capabilities of this upgraded LDAP provider through [Microsoft's LDAPConnection documentation](#).

20. Renaming of NCache Manager to NCache Management Center

In this latest release of NCache, we've introduced a technical refinement by renaming the NCache Manager to the NCache Management Center. This alteration represents a strategic move towards enhancing the tool's functionality and providing users with a more advanced platform for cache cluster management. While the name has evolved, the underlying capabilities and features remain robust, allowing you to seamlessly configure, monitor, and administer your cache clusters with precision and efficiency.

21. Enhanced User-Friendly Interface for Securing Cache Nodes

NCache has further enhanced its user-friendly interface for securing cache nodes. While we previously offered this feature, we have now made significant improvements to ensure an even smoother experience. The process of configuring cache node security is now more intuitive and streamlined, allowing you to effortlessly secure your cache nodes with ease.

22. Authentication for NCache Management Center (NCache Manager)

NCache Management Center, formerly known as NCache Manager, now includes authentication functionality. When a node is secured, the NCache Management Center will prompt users to authenticate by displaying a login page. This ensures that only authorized users gain access to the management center, providing an additional layer of security to your NCache environment. Only the configured node administrators can login to the secure node.

23. TLS Configuration through PowerShell

NCache now offers a seamless way to configure Transport Layer Security (TLS) through the new Enable-NCacheTLS and Disable-NCacheTLS cmdlets. Previously, users had to manually configure TLS by editing registry settings, which could be complex and time-consuming. With these cmdlets, you can effortlessly enable or disable TLS on one or more servers and client nodes.

24. Enhanced NCache Security Management using PowerShell

NCache introduces an enhanced approach to managing security settings through PowerShell, offering more granular control over security configurations. The revamped Enable-NCacheSecurity and Disable-NCacheSecurity cmdlets simplify the process of enabling or disabling security while providing greater flexibility.

With the introduction of the Add-NCacheUserOrGroup and Remove-NCacheUserOrGroup cmdlets, administrators can efficiently manage users and groups with specific access privileges. This expanded PowerShell-based security management enhances control and customization options for securing NCache environments.

25. NCache Playground

In this latest NCache release, we are excited to introduce NCache Playground. It's a powerful and interactive tool designed to enhance your experience with NCache. NCache Playground serves as a dedicated environment for users to explore, experiment, and familiarize themselves with NCache features, samples, and real-world scenarios. With NCache Playground, you can effortlessly run NCache samples, make on-the-fly adjustments, and execute exercises without the need for a full-fledged development

environment. This tool is ideal for users looking to quickly grasp NCache concepts, evaluate its capabilities, and accelerate their learning curve.

List of Bugs Fixed

[744213](#) FIX: Connectivity lost to NCache Cluster due to a security authentication error: fixed an issue where existing NCache processes failed with a COMException and the message "Illegal operation attempted on a registry key that has been marked for deletion" upon NCache Service restart. This occurred when LDAP/Active Directory used the secure port for connection, causing the cache to be unable to verify credentials for new client connections. The fix ensures that NCache processes communicate through the NCache service for proper communication with the LDAP/Active Directory server and validation of credentials.

[744214](#) FIX: The inline SQL queries fail to execute with special characters in parameter values.

[744215](#) FIX: Timeouts on the client application with client caches on a few instances of node joining or leaving a cluster.

[744216](#) FIX: EF based applications throwing "Index was outside the bounds of the array."

[744217](#) FIX: Cannot open a MultiReader in NCache Lucene.

[744218](#) FIX: Email Alerts configuration is not hot-applicable from NCache Manager.

[744219](#) FIX: Auto-start configuration for client cache is not reflected in the config.nconf.

[744220](#) FIX: Email alerts for client cache are not working.

[744221](#) FIX: Client cache is not removed from all nodes when removed from the NCache Manager.

[744222](#) FIX: NCache Manager is not able to establish a connection with LDAP server on a secure port.

Release Notes NCache 5.3 SP1

Monday, Sept 12, 2022

Introduction

NCache 5.3 SP1 contains some very important enhancements and bug fixes. The release also contains major user experience improvements. NCache 5.3 is a recommended upgrade for all NCache users.

Enhancements / New Features

Following are some enhancements made in this release:

1. Registration of Evaluation through NCache Web Manager

For NCache images available on Azure and AWS, the registration for free evaluation of NCache is supported in NCache Web Manager. When a machine is not registered either with evaluation or a license key, the NCache Web Manager's default screen takes users to a registration process to either start their evaluation or activate their boxes.

2. Renaming of NCache NoSQL to NCache Persistence

The feature 'NCache NoSQL' released in 5.3 has been renamed to 'NCache Persistence'. The working of the feature remains the same, however, the additional providers are removed. The NCache Persistence can now only be used with the built-in file system based store.

All NoSQL related Powershell cmdlets have also been renamed.

3. Separate Nuget Package for NCache CLR Store Procedures

A separate nuget package is released for NCache CLR Stored Procedures. This helps in easily creating CLR Stored Procedures that use NCache API.

4. Support for Connection Options in NCache SignalR Backplane

Instead of using configurations specified in client.nconf, users can force SignalR applications to use the connection options specified in web.config or appsettings.json files of the application. If specified, the application will use these settings.

5. Refresh Interval Value Changed from Minutes to Seconds

The refresh interval value can now be set in seconds instead of minutes. The change has been made to accommodate scenarios where refresher should run at an interval of less than a minute.

6. MapReduce, Aggregator and Memcached Integration Marked Deprecated

MapReduce, Aggregator and Memcached integration are marked deprecated and will be removed in the next version.

List of Bugs Fixed:

744210 FIX: Cache refresher is running before cache loader when the refresh interval is small.

744211 FIX: Object reference exception on opening an already disposed lucene directory.

744212 FIX: NCache client logs are not created if configured using CacheConnectionOptions API.

Release Notes NCache 5.3

Tuesday, April 12, 2022

Introduction

NCache 5.3 contains some very important new features and also various performance and memory optimizations. The release also contains major user experience improvements. NCache 5.3 is a recommended upgrade for all NCache users.

Enhancements / New Features

Following are some enhancements made in this release:

7. NoSQL Database (In-Memory with Persistence)

NCache is now providing a NoSQL Database feature where the entire database is In-Memory and distributed but it is also persisted to a permanent storage in real-time. This real-time persistence ensures that your In-Memory data is always in sync and never lost even when you restart all the NCache servers.

NCache provides the following real-time persistence options For NoSQL Database:

- i. **NCache Persistence Provider:** the default option. NCache uses LiteDB based file persistence in a shared network location (UNC Path). You can choose SSD / HDD, NAS / SAN, or Cloud storage based as your preference.
- ii. **SQL Server Provider**
- iii. **MongoDB Provider**
- iv. **Other Databases (coming soon)**

You can use NCache NoSQL Database in the following ways:

- i. **Create New NoSQL Database:** this creates the database with your storage option and also creates an In-Memory distributed copy of it.
- ii. **Open Existing NoSQL Database:** this uses an already created NoSQL Database and creates an In-Memory distributed copy of it.

8. Distributed Lucene for .NET (Full Text Search)

NCache provides Distributed Lucene for .NET applications using Lucene for Full Text Search. Distributed Lucene takes the standard Lucene.NET index and makes it distributed so you can scale the Lucene index to multiple NCache servers even at runtime. This not only allows you to increase your index size but also your application transaction capacity because your application now talks to multiple NCache servers for Lucene.

Here are some highlights of Distributed Lucene feature:

- i. **No Code Change Required to Use:** you don't have change any code in your existing Lucene application for using Distributed Lucene. The standard Lucene.NET API is supported.

- ii. **Lucene Index Distributed to Multiple NCache Servers:** NCache distributes Lucene index and persists it to multiple NCache servers. Each server persists a portion of the entire index. NCache has modified its Partitioned Cache and Partition-Replica Cache topology to handle distributed persistence.
- iii. **Add / Remove NCache Servers at Runtime:** you can add or remove NCache servers at runtime. Each time you add a server, the existing Lucene index is further partitioned and a portion is copied to this newly added server. When you remove a server, its index is copied and merged to other remaining NCache servers.
- iv. **Directed Partitioning (Not Auto):** due to the fact the most Lucene indexes are quite large, if an NCache server goes down at runtime, the partitioning is not redone automatically like it is done for non-Lucene situations in NCache. However, if you explicitly add or remove NCache servers with NCache admin tools then partitions are created or deleted and Lucene index is either further partitioned and copied to the new NCache server or Lucene index from the NCache server being deleted is copied and merged to other partitions in the cluster.
- v. **Partitioned Cache / Partition-Replica Cache only:** Distributed Lucene feature is available only on these two caching topologies. The reason for this is that other two caching topologies (Mirrored Cache / Replicated Cache) don't add a lot of value to this feature.

9. Python Client

NCache now provides a Python Client on both Windows and Linux. This Python client has all of client-side API features of NCache that traditionally .NET and Java clients enjoyed.

10. Scala Client

NCache now provides a Scala Client on both Windows and Linux. This Scala client has all of client-side API features of NCache that traditionally .NET and Java clients enjoyed.

11. Import / Export for NoSQL Database

NCache provides Import and Export tools as PowerShell Cmdlets. With these tools, you can import or export JSON / CSV data into the NoSQL Database or out of it. This allows you to extract all or portions of your NoSQL database.

12. Backup / Restore NoSQL Database

NCache Persistence Provider for NoSQL Database persists data in multiple files located in a shared network folder (based on UNC path). So, you can use regular file system tools to perform backups.

To provide online backups capability, NCache also provides an admin tool (as PowerShell Cmdlet) to briefly suspend NCache writes to the persistent storage and only make them in memory while you're performing your filesystem backup. But, when you're done with backup, you can enable writes and all the pending writes are immediately applied to the persistent storage.

If you're using SQL Server or MongoDB as your storage option, then these database provide online backup tools that you should use.

13. Import Lucene Index

NCache gives you the ability to import an existing Lucene index into NCache Distributed Lucene in a bulk file copy manner that is much faster than reading documents from your existing Lucene index and individually writing them to NCache Distributed Lucene thru its API.

You can do the following types of import of Lucene index:

- i. **Import existing Lucene Index into NCache:** if you already have a Lucene index built, you can use NCache import tools to import it quickly into NCache Distributed Lucene. And, your index is copied at file level and not document level which is much faster.
- ii. **Import existing Distributed Lucene Index:** if you already have an NCache Distributed Lucene index and you want to import it into another location / environment, you can do so easily. The index is copied at bulk file level and not document level so it is very fast.

14. Backup / Restore Distributed Lucene Index

NCache partitions and saves Lucene index into a distributed environment and on each NCache server. And, all index is stored as multiple files. Therefore, you can use regular filesystem backup / restore tools on them.

Currently, you cannot perform online backup unless your application is not making any updates to Lucene index. You must choose a low-traffic time to stop the servers and do you backup.

Restoring a Distributed Lucene index is the same as restoring file system files and therefore possible. You can have to restart NCache servers with the same distribution configuration information that you had when you did the backup.

15. .NET 6.0 Support

NCache now fully supports .NET 6.0. All NCache Servers are compiled in .NET 6.0 (or .NET Framework 4.8 if you've downloaded that version). NCache clients are also .NET 6.0. However, NCache also provides support for earlier version of both .NET Core and .NET Framework for NCache clients.

16. JSON Serialized Sessions (ASP.NET / ASP.NET Core)

NCache now allows you to use JSON Serialization for your ASP.NET / ASP.NET Core sessions. Previously, the only option you had was to use Binary Serialization provided by .NET. We still have Binary Serialization option but in .NET 6.0, Binary Serialization is disabled by default and is not recommended.

JSON Serialization also lets you use objects that are not marked "Serializable" and also without using Compact Serialization on them. With JSON Serialization, you only have to make configuration setting change.

17. SQL Query Index using Annotations

In order to include any object attribute in NCache SQL Queries, you must index it first. Previously, the only way to index was to define an index as part of NCache configuration. That is still possible and a good way to do this.

However, now you can define query indexes programmatically using custom annotations. With this, you now have full support of different ways of creating query index in NCache.

18. Nullable Support in SQL Queries

NCache now supports nullable properties for creating an index and then using them in SQL Queries. This feature is provided because .NET properties and fields are nullable. But, previously NCache did not provide support searching based on null values and now it does.

19. Geospatial Indexes for Distributed Lucene

NCache now supports Geospatial indexes in Full Text Searching with Distributed Lucene. Just like regular Full Text Search Lucene index, the Geospatial indexes also use Lucene.NET internally to support Geospatial queries. The NuGet package for Geospatial indexes is separate from the Full Text Search index NuGet package.

20. Faceted Search for Distributed Lucene

NCache now supports Faceted Search with Distributed Lucene. Faceted Search is a technique that involves augmenting traditional search techniques with a faceted navigation system. This allows the user to narrow down search results by applying multiple filters based on a faceted classification of the items.

NCache provides a NuGet Package for Faceted Search that has all the APIs required to perform Faceted searches.

21. Fresh 60-Day of Evaluation Period

Evaluation periods are already tracked in previous version of NCache at email domain level and not at individual download or individual installation level. This means that if you had evaluated an earlier version of NCache but didn't buy it, your evaluation period most likely has expired already.

However, NCache 5.3 starts your evaluation period fresh for this version. You get a 60-day evaluation period like before and you can ask our sales team to extend it 30 days at a time for up to 180-day total.

22. Memory Optimizations for Faster Performance

NCache had earlier implemented smart object pooling and also breaking up larger objects into less than 80K objects so LOH is not frequently used. This earlier memory optimization had already improved NCache performance quite a bit for most commonly used "atomic operations" like Get, Insert, Update, Delete of individual items.

However, a number of other areas like bulk operations, query indexes, SQL searching, etc. were not fully optimized in this manner and therefore resulted in frequent use of LOH and Gen2 collections and hence not the best performance.

Now, this version of NCache has optimized memory management in all these areas that has resulted in an even faster performance of NCache all around.

Following optimizations have been made:

- i. Object pooling in new areas to ensure that bigger objects are reused instead of leaving them to be collected by GC.
- ii. Avoiding allocation on LOH in new areas.
- iii. Using latest version of Protocol Buffers (Protobuf) that has much better performance

23. Support for https (NCache Web Manager)

NCache traditionally ran in an on-premises environment and therefore there wasn't any need for using https to access NCache Web Manager. But, now with Azure, AWS, and other clouds becoming very prevalent, more and more situations are arising where a user may need to access NCache Web Manager thru https.

NCache now provides support for https for accessing NCache Web Manager. By default, it is http but you can configure it to use https if you have a certificate.

24. Support for Machine Names (NCache Web Manager)

NCache has traditionally required that you specify NCache servers based on their ip-address and not machine names. The reason behind this was that in many situations, NCache servers have multiple Network Interface Cards (NICs) and you didn't know which NIC did the machine name map to. Therefore, using ip-address for NCache servers and clients is still the preferred way.

But, now NCache provides you the ability to specify machine names instead of ip-address if you wish. You are be able to specify machine name for adding a cache server or a cache client to the cache configuration. Similarly, all views on NCache Web Manager continue to use ip-addresses by default.

List of Bugs Fixed:

[744206](#) FIX: 'value does not fall within expected range' exception is thrown when using List<T> with Contains() LINQ query.

[744207](#) FIX: Security vulnerabilities in jQuery version used in NCache Web Manager.

[744208](#) FIX: Linux based DEV installations do not accept requests from remote clients.

[744209](#) FIX: Cache name in various Powershell cmdlets is allowing special characters, hence causing issues.

Release Notes NCache 5.2 SP1

Thursday, March 12, 2021

Introduction

NCache 5.2 SP1 contains a few important performance and memory optimizations. The release also contains major user experience improvements. NCache 5.2 SP1 is a recommended upgrade for all NCache users.

Enhancements

Following are some enhancements made in this release:

25. Memory Optimizations in Bulk Operations

Bulk operations with relatively larger item size were taking a lot of memory in previous versions. In this release, object pooling and other LOH avoiding techniques are used to have a smaller memory footprint on code paths related to Bulk operations.

26. Upgraded to the Latest Protobuf-net version

The latest version of protobuf-net has some major memory enhancements. NCache now uses the latest version of protobuf-net to further improve the memory and performance.

27. Improved User Experience for Offline Activation

Previously, offline activation was a multi-step process that required NCache users to talk to Alachisoft Support team. Now with this newer version, users can complete the offline activation without contacting Alachisoft support team.

28. Domain Level Installation Keys

Installation keys come with FREE evaluation of 60 days. In this newer version, the installation keys are tracked at customer domain level instead of individual customer. So the evaluation of NCache actually starts from the day of download by the first user in the company. However, each version of NCache will have its own evaluation period from now on.

29. Extension of Evaluation

Extension of evaluation is also issued by Alachisoft sales team. It can be extended up to 180 days. However, just like initial evaluation, extension is also tracked at customer domain level.

List of Bugs Fixed:

[744201](#) FIX: NHibernate integration does not use connection string name.

[744202](#) FIX: Unable to receive the "Item Removed" event when an item is expired and invalidated from the cache.

744203 FIX: Client cannot connect with cache servers if client and servers are on different subnet.

744204 FIX: SSH.NET dependency is removed from NCache.SDK nuget package.

744205 FIX: Cache Loader skips datasets when run on local cache.

Release Notes NCache 5.2

Thursday, March 25, 2021

Introduction

NCache 5.2 contains a few important features related to caching. The release also contains major performance improvements. NCache 5.2 is a recommended upgrade for all NCache users.

Enhancements and New Additions

Following are some enhancements made in this release:

30. Cache Refresher

Cache Loader/Refresher is a service that runs periodically at a configurable interval and refreshes cache data. Users configure this feature by adding one or more named datasets in configuration. Each dataset can be configured to be either loaded one time or refreshed periodically.

31. TOPIC (Pub/Sub) Enhancements

Following two additions are made to Pub/Sub.

- Priority of TOPIC

At the time of creation of a TOPIC, a priority can be assigned to a TOPIC. Messages from the higher priority TOPICs are delivered first while the messages from the lower priority TOPICs are evicted first. If priority is not assigned, a TOPIC is created with 'Normal' priority.

- Ordered Delivery

Publisher should be able to send messages with instructions to preserve the order in which they are published. Such messages are delivered to subscribers in the exact same order as they were published with. Ordered messages from a certain publisher will reside on one cache server. This will be implemented using location affinity.

All ordered messages will be delivered to the same subscriber in case of DeliveryOption.Any.

32. Query Indexes from JSON Documents

For applications purely using JSON API, defining .NET or Java based query indexes may not be possible. Therefore, definition of indexes from JSON documents is supported.

In this case, user specifies the path to a json file. NCache Web Manager reads the attributes in json file and list them in a grid. User can select one or more attributes from the list for which indexes should be defined.

Query indexes from json document can also be created using PowerShell command.

33. Custom Dependency Provider

Custom dependency is now deployed on the server side. Just like Read/Write Thru providers, users need to implement Custom Dependency providers. There can be one or more custom dependency providers and each will have a unique name.

When adding an item through API, user specifies the name of custom dependency provider already configured and deployed.

34. Templates for Email Notifications

Users may want to change the way text and subject of email notifications they receive from NCache. All the text and subject of emails that are generated by NCache use templates. These templates are shipped inside install directory. Users can change these templates according to their requirements.

35. Support for Two LDAP Controllers

In some organizations, there may be more than one domain controller configured for high availability. When a primary domain controller goes down, the secondary controller becomes active. NCache now also supports to configure security with both primary and secondary domain controller.

36. TLS for Linux

TLS 1.2 support is provided for transport level communication between NCache server on Linux and cache clients.

37. Session Sharing between ASP.NET and ASP.NET Core

Sharing sessions between an ASP.NET and ASP.NET Core applications is supported. This can be enabled from configuration settings. For sharing sessions between different applications, all applications must use the same custom session id generator.

This is also supported for multi-regional sessions.

Session sharing is not supported if configured through IDistributedCache.

38. Dependencies Support in Response Cache

Users can specify SQL dependencies to invalidate the response of a page from cache. If the data corresponding to the SQL specified gets modified or deleted, the response of the cache gets deleted. On the new requests, it gets regenerated and is added to cache with the same SQL dependency.

This is not supported if configured through IDistributedCache.

39. Identity Server 4

NCache can be used as an external store for Identity Server 4 as;

- A caching layer on top of Identity Server 4 store.
- A persistence store for Identity Server 4.

40. Support for Multiple Caches through IDistributedCache

When configured with NCache, user may want to use different caches session caching and data caching. NCache should provide an option to use multiple caches for different purposes when used as IDistributedCache.

41. New Java Client

The new Java client is 100% identical to the new .NET API. It has following services;

- Search Service
- Messaging Service
- Notification Service

The new Java client also uses pipelining for better performance.

42. Java based Server-side Code

Following server-side modules can be written in Java.

- Read/Write Thru
- Cache Loader/Refresher
- Custom Dependencies

43. New Node.js Client

NCache now has a Node.js client which is 100% identical to the new .NET & Java JSON API. It has following services;

- Search Service
- Messaging Service
- Notification Service

44. Prometheus

Integration with Prometheus for monitoring key metrics of NCache. NCache publishes a configurable set of counters to Prometheus server.

45. Grafana

NCache dashboard for Grafana is provided on Grafana gallery. The dashboard has various counters that are fetched from Prometheus server where NCache is publishing its counters.

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46. NCache Web Manager in Profession Edition

NCache Professional edition now has a web based GUI tool for NCache management and basic monitoring. NCache Web Manager allows users to create, configure, start and stop caches. This also helps them quickly run a stress test and see statistics.

Release Notes NCache 5.1

Monday, November 23, 2020

Introduction

In NCache 5.1 there are some important bug fixes and a few new enhancements made.

Enhancements and New Additions

Following are some enhancements made in this release:

47. Memory and vCPU based Licensing

Server-only licensing now also takes memory into consideration for calculating the number of licenses required on a machine. The number of clients that can connect to a server is now unlimited in the server-only licensing.

Based on the combination of size of RAM and number of vCPUs, the number of licenses required on a machine is determined. These combinations are given on [NCache pricing page](#) in form of license plans.

48. Server based activation

Activation on client machines is not supported anymore.

Even if your license is client-server, you're only required to activate cache servers. At the time of activation, users need to specify the number of client licenses too to activate on the cache server.

NCache Professional edition does not support this licensing scheme.

49. FREE DEV/Test Cache servers

Users can now create FREE DEV/Test cache servers. Remote clients can connect to these cache servers, however, with a following few limitations;

- i. Only standalone (local) caches are supported.
- ii. Max of 3 caches per node.
- iii. Max of 2 GB combined size of running caches per node.
- iv. Max of 25 requests/second per cache.
- v. Cache size is not hot applicable.

50. Register remote machines for NCache evaluation

Now users can register remote machines for FREE evaluation of NCache using '-Server' parameter in Register-NCacheEvaluation Powershell command.

List of Bugs Fixed:

[744198](#) FIX: Get-NCacheVersion of a remote machine showing wrong system information.

[744199](#) FIX: NCache is only installed in default install directory. Custom directory is not picked by the installer.

[744200](#) FIX: NCache web manager shows evaluation expiry message for caches on DEV edition.

Release Notes NCache 5.0 SP4

Thursday, October 22, 2020

Introduction

In NCache 5.0 SP4, there are some important bug fixes and a few new enhancements made.

Enhancements and New Additions

Following are some enhancements made in this release:

51. More configuration options for WAN Replication

WAN Replication can now be customized further to have more control over how frequently data is replicated between two data centers. Here are the configurations;

i. Bridge Replication Interval

Replication Interval is the intermediate delay interval in milliseconds between two consecutive replications. Its default value is set at 3000 milliseconds (3 seconds). Users can change this interval as per their requirement by adjusting the value of the '*NCacheServer.BridgeReplicationInterval*' tag in the NCache service configuration file.

ii. Bulk Threshold Size

The cache sends operations to the bridge in bulk of provided threshold size. The default size is 500 KB. Users can configure this size by changing the value of tag '*NCacheServer.BridgeBulkOperationSize*' in the NCache service configuration file.

52. Support for EF Core 3.1

Support for the latest version of EFCore is provided in this release.

53. Server-Only Licensing

Server-Only licensing is supported in this new release where only server licenses are purchased. In this type of licensing, one cache server requires minimum of 4 licenses.

54. Additions in Professional Edition

Following features are added to NCache professional edition.

- i. Professional editions can communicate with Enterprise servers.
- ii. Support for JSON API.
- iii. Auto-start caches at startup
- iv. Support for EFCore
- v. Support for ASP.NET Core SignalR
- vi. Support for Full text searching
- vii. Support for Output Caching

55. Feature Usage Reporting

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NCache sends a feature usage report once a month to Alachisoft server. This is done to improve the product based on the data received from customers. Following information is part of this report;

- i. Cluster size and topology
- ii. Number of clients that connect with this cluster
- iii. NCache Features used

56. PowerShell Cmdlet for Evaluation and Extension

A new PowerShell cmdlet 'Register-NCacheEvaluation' is provided to register NCache for free evaluation using the evaluation key received from Alachisoft. This cmdlet can also be used to extend the evaluation period.

NCache Open Source can be registered using Register-NCacheOpenSource cmdlet.

57. Support for NCache Cloud Service

This release of NCache supports NCache Cloud offering. NCache Cloud Service is offered in Azure and AWS.

58. Installation in Azure and AWS

All editions of NCache can now be installed in Azure and AWS but it is recommended that NCache's marketplace image is used instead of installing NCache.

List of Bugs Fixed:

[744194](#) FIX: Remove cache PowerShell command does not remove client cache associated with cache that causes issues when recreating cache and client cache.

[744195](#) FIX: Cache item meta data is lost on fetching data from one client cache after updating it from other client cache

[744196](#) FIX: L1 is not initialized when the configuration is provided in config of install directory and is missing from local configs in application bin folder.

[744197](#) FIX: Cache host process is consuming high memory with Pub/Sub.

Release Notes NCache 5.0 SP3

Monday, June 15, 2020

Introduction

In NCache 5.0 SP3, there are some important bug fixes and a few new enhancements made.

Enhancements and New Additions

Following are some enhancements made in this release:

1. Upto 4 licenses required for remote clients in NCache SaaS offering

NCache Remote Clients normally require at least 2 licenses per box. If a machine has more than 8 cores, it requires an additional license for every 4 cores. For example, a machine with 12 cores requires 3 licenses and 20 core requires 5 licenses.

However, for NCache SaaS users, the licenses required for remote clients never exceed 4 even if the number of cores on that machine are more than 16.

2. New Powershell Commands

Following are the new Powershell commands added;

- a. Get-AllCacheLogs to retrieve a list of all cache logs for a given cache.
- b. Get-CacheLog to retrieve complete log file for a given cache with the given cache name.
- c. Create-MemoryDump for the given cache or service.
- d. Get-AllMemoryDumps to print a list of all memory dumps taken with their sizes.
- e. Remove-MemoryDump to remove the given memory dump from the disk.

3. Enhancements in existing Powershell Commands

Following enhancements were made to the existing Powershell commands;

- a. Test-Stress, Get-CacheCount and Add-TestData optionally take "-Servers" parameter so that you don't have to add clients in cache to use these tools.
- b. Export-CacheConfiguration command exports the config.nconf of the given server completely if cache name is not specified.

List of Bugs Fixed:

[744191](#) FIX: EFCore extension method .FromCache fails if cache is not available but database is.

[744192](#) FIX: OutputCacheProvider integration being unable create CacheItem with expiration value DateTime.MaxValue if the time zone is UTC+.

[744193](#) FIX: KeepAlive is not automatically enabled in case of Server-Activated Licensing

Release Notes NCache 5.0 SP2

Monday, December 09, 2019

Introduction

In NCache 5.0 SP2, there are some important bug fixes and a few new enhancements made.

Enhancements and New Additions

Following are some enhancements made in this release:

1. Support for more than 2 cache clusters in Bridge

Previously, Bridge could not have more than 2 caches. In this release, NCache now supports to have more than 2 caches in a Bridge. At least one cache must be active.

2. Manual state transfer between Caches in a Bridge

Even though active caches replicate their data automatically to other caches in a Bridge, the state transfer between the caches is no more active. When a cache goes down or a new cluster is added, a manual interaction to synchronize caches is required.

3. LDAP Security

LDAP security support is added for both Windows and Linux. Previously, there was no support for LDAP on Linux, while Windows had Active Directory based support.

4. Pub/Sub Enhancements

Following enhancements have been made in Pub/Sub (TOPIC);

- a. Asynchronous message publishing.
- b. Asynchronous TOPIC creation.
- c. Bulk message publishing

5. Custom Dependency Enhancements

Following enhancements have been made to Custom Dependency feature.

- a. Bulk evaluation of custom dependencies.
- b. Multi-threaded evaluation of custom dependencies.
- c. Extensible notifiable dependencies

6. Configurable Pipelining

NCache now uses System.IO.Pipelines for high performance IO operations between clients and servers. Due to this approach, NCache is able to perform 2 Million operations per second on a 5 node cluster.

Pipelining is enabled by default on all caches. However, this can be disabled at the time of cache creation or through modifying cache configuration at any time.

7. Pluggable Modules

Architectural changes are made to NCache to add support for dynamically registering modules that can use NCache's distributed architecture without making any changes in NCache source code.

Lucene.NET support is also added through NCache Modules.

8. More Powershell Cmdlets

Following Powershell Cmdlets are added;

- a. New-Bridge
- b. Remove-Bridge
- c. Add-BridgeNode
- d. Remove-BridgeNode
- e. Add-BridgeCache
- f. Remove-BridgeCache
- g. Set-BridgeCacheMode
- h. Start-BridgeStateTransfer

For details, please see <http://www.alachisoft.com/ncache/edition-comparison.html>

List of Bugs Fixed:

744186 FIX: NCache Web Manager has broken input controls on FireFox.

744187 FIX: NCache Web Manager's statistics window consume high memory if left opened.

744188 FIX: There is no option to configure eviction settings for client caches.

744189 FIX: Items from client cache are removed if there is a network glitch between cluster and client cache.

744190 FIX: Evaluation extension tool is not available in Linux installation of NCache Professional edition.

Release Notes NCache 5.0 SP1

Tuesday, August 26, 2019

Introduction

In NCache 5.0 SP1, there are some important bug fixes and a few new enhancements made.

Enhancements and New Additions

Following are some enhancements made in this release:

- 1. ASP.NET Core SignalR backplane**
NCache SignalR backplane for ASP.NET Core applications is provided.
- 2. Support for Internet Explorer 11**
Web management can now be done from Internet explorer 11 (latest release) but its recommended to use Microsoft Edge, Chrome, Firefox or Opera.
- 3. Dynamically generated installation keys**
Installation keys for all editions of NCache are now dynamically generated at the time of download. This means that every customer gets a unique installation key.
- 4. Only .NET based cache servers in Professional and Open Source**
Cache servers in Professional and Open Source editions are only .NET based. Clients are available for both .NET and .NET Core. Cache servers can't be installed on Linux for these two editions.
- 5. Less features in Open Source and Professional editions**
Open source and Professional editions have gone back to Alachisoft's original strategy where we had limited number of features in both Open Source and Professional editions. For details, please see <http://www.alachisoft.com/ncache/edition-comparison.html>

List of Bugs Fixed:

744180 FIX: Cannot compact serialize/deserialize class with no default constructors.

744181 FIX: Manually changed 'Keep Alive' settings are lost on configuration change through management tools.

744182 FIX: Custom dependency gets executed on L1 cache. It should only be executed on L2.

744183 FIX: Incorrect server IP addresses in client.nconf in case of dual NIC configuration on cluster nodes.

744184 FIX: Inproc client cache is configured with 'binary format' which causes serialization and deserialization and thus slows operations down.

744185 FIX: Client side counters are not populated in Web Manager in some cases.

744186 FIX: Client side counters are not populated in Web Manager in some cases.

744187 FIX: Exception 'No server is available to process the request' when client gets disconnected simultaneously from all cache servers.

Release Notes NCache 5.0

Tuesday, May 14, 2019

Introduction

NCache 5.0 contains a few important features related to clustering and caching. The release also contains major performance improvements. NCache 5.0 is a recommended upgrade for all NCache users.

Enhancements and New Additions

Following are some enhancements made in this release:

1. New API

NCache API has been refactored to make it simpler and easy to use by reducing the number of overloads to various methods. The new API is also using the latest features of C# and .NET Framework (Task Parallel Library, async methods and generics).

2. TOPIC (Pub/Sub) Enhancements

Following enhancements are made to the NCache messaging framework.

- a. Wildcard support in TOPIC allows users to subscribe to multiple TOPICs in one call. When a client subscribes to a TOPIC, it can subscribe to the exact TOPIC of a published message or it can use wildcards to subscribe to multiple TOPICs simultaneously. A wildcard can only be used to subscribe to topics, not to publish a message. However, a publisher can receive failure notifications of published messages using wildcard TOPIC search.
- b. Durable Subscriptions ensure that the messages published on a TOPIC are delivered to suitable subscribers before it is removed from the store. By default, all subscriptions created on a TOPIC are non-durable subscriptions. That means that the messages for non-durable subscribers are not kept in store during the time it is disconnected with cache server.

However, for durable subscriptions (named subscriptions), messages are stored until they are pushed to ALL or ANY subscribers within that subscription. If a durable subscriber comes back after an abrupt disconnection (leaving without calling Unsubscribe), it will be able to receive the messages published during the time it was down.

However, messages are removed from store after their expiry even if they are not delivered to ALL or ANY subscribers.

There are further two policies in Durable subscriptions.

- Shared, where there can be multiple subscribers in a subscription.
- Exclusive, where then can be only one subscriber at time in a subscription. All non-durable subscriptions are Exclusive.

3. Performance Improvements

Some major performance improvements are made in this release. Core sub-systems are redesigned to gain better performance of cache operations. Some of these improvements include the incorporation of latest libraries like System.IO.Pipelines from Microsoft.

System.IO.Pipelines is a new library that is designed to make it easier to do high performance IO in .NET.

4. **Reliable Events**

All NCache events now internally use the more reliable NCache's Pub/Sub framework. Following types are events are now based on Pub/Sub.

- General cache notifications.
- Selective notifications.
- SignalR
- Continuous Query

5. **Projections and FROM clause in SQL**

NCache's SQL is enhanced now to have projections as well as FROM clause in an SQL statement. Previously, there were no projections in SQL statement and as a result complete cache items were returned matching the given criteria.

6. **Search on GROUPs in SQL**

Support to search cache items by the their 'Group' through SQL is provided. Using this feature, users can query cache to return cache items against a 'Group' just like they do it for 'Tags'.

7. **JSON Serialization**

Traditionally NCache stores items in cache as Binary data. Binary serialization can be expensive in terms of both time as well as memory it consumes. In NCache 5.0, users can optionally configure Cache to have JSON serialized store. JSON serialization is efficient in the most of cases.

8. **Distributed Data Types**

NCache now has distributed data types and data structures provided as implementations of .NET's interfaces. Following implementations are provided.

1. **DistributedList** is a distributed implementation of `System.Collections.Generic.ICollection<T>`. It allows duplicate keys and preserves their order.
2. **DistributedHashSet** is a distributed implementation of `System.Collections.Generic.ICollection<T>`. It does not allow duplicate keys and does not preserve order. DistributedHashSet has additional methods for Union, Intersection and Difference of two sets.
3. **DistributedDictionary** is a distributed implementation of `System.Collections.Generic.IDictionary<TKey, TValue>`. It lets users store data in key value pairs. Order is not preserved in this data structure.
4. **DistributedQueue** is also a distributed implementation of `System.Collections.Generic.ICollection<T>`. However, data stored in this data structure is consumed in FIFO model, as it is in case of Queues.
5. **Counter** is a distributed data type which allows applications to Increment or Decrement its value.

9. Schedule Maintenance Support in Partitioned-Replica

Stopping a server node in maintenance mode causes redistribution of data between the remaining nodes. This can take a lot of time depending on the data in cache. During this time, cache is in vulnerable state and some operations might fail or take longer to execute.

With this new feature, when a node is stopped for maintenance, the data in cache is not redistributed. The feature is useful when a node in cluster is stopped for a short time to apply patches or other maintenance work.

10. Location Affinity

Location affinity means keeping the related cache items on one node. This feature can be helpful in many ways like faster queries and bulk operations etc.

11. Full Text Searching (Distributed Lucene.NET)

Lucene.NET is a text searching engine library but its not distributed. With NCache's Lucene.NET sdk, users will be able to build distributed Lucene indexes and query them. NCache's Lucene.NET sdk is similar to Lucene.NET library, therefore, users don't have to learn much to use NCache's DistributedLucene.NET API.

12. .NET Core based NCache Server on Windows

.NET Core based NCache Server will be available on Windows too. Previously, it was only available on Linux.

13. Server Activated Licensing

This is a new licensing scheme where licenses are only activated on cache servers. However, cache servers are also activated to allow a certain number of clients to connect with caches. The number of server and client licenses required are same as in Client-Server activation scheme.

14. Web Based Management and Monitoring

NCache configuration, management and monitoring is done through a web-based application. By default, this application is installed on all cache servers and clients. Users can connect with any of the servers from their browsers to manage their cache clusters.

The application is ASP.NET Core based and therefore, can run on Windows as well as Linux. This application has all the features as the Desktop based NCache Manager had. Desktop based NCache Manager and Monitor are discontinued.

15. New Powershell Commands

Following few Powershell commands are added;

- a. Get-ClusterHealth shows the health of cache cluster in Powershell.
- b. Get-CacheServerStatistics shows the performance counters of one or more cache servers in Powershell.
- c. Get-CacheClientStatistics shows the performance counters of one or more cache clients in Powershell.

List of Bugs Fixed:

744176 FIX: Split-brain auto recovery kicks in even when cluster was not in split-brain scenario.

744177 FIX: Classes without default constructors are failed to compact serialize.

744178 FIX: Custom dependency does not work with client cache.

744179 FIX: On applying configuration from manager, Keep-Alive settings are lost from client.nconf.

Release Notes NCache 4.9 SP1

Tuesday, August 07, 2018

Introduction

In NCache 4.9 SP1, community edition has been discontinued and Professional edition has been brought back. There are some important bug fixes and a few new enhancements made in this release.

Enhancements and New Additions

Following are some enhancements made in this release:

1. .NET Core based NCache server on Linux

NCache Server (.NET Core based) can now be hosted on Linux boxes. Separate installers for Linux (.tar.gz) are made available for download.

2. 60-Day Trial is back

The 60-day fully working trial is back. There are no performance limitations during evaluation period now.

3. Professional Edition

Professional edition has the same features as they are in Open Source edition plus some extra management PowerShell commands. Both client and server installations have a free 60-day Trial.

4. Docker Images for Linux and Windows Nano Server

Docker images for Linux and Windows Nano server are made available on Docker Hub. Docker files are also available on GitHub.

5. Bridge queue counter

A perfmon counter is introduced to monitor number of items in bridge.

6. Wildcard search in Tags API

Support for wildcard search in GetKeysByTag and GetByTag APIs is provided.

7. Enable client side logs from API

Support is provided to enable client side logging from API through CacheInitParams interface.

8. Subscription based licensing

Subscription based licensing has been introduced to support both cloud and on-premise deployments.

List of Bugs Fixed:

[744169](#) FIX: Timeout on 'IN' predicate queries on large number of parameters.

[744170](#) FIX: Requests timeout to clients continue to run on servers, hence, causing high CPU and memory issues.

[744171](#) FIX: Thread count keeps increasing in inproc client cache.

744172 FIX: In case of client cache, items are fetched from cache without being decrypted.

744173 FIX: Memcache gateway service is missing.

744174 FIX: API logging is missing for a few locking related methods.

744175 FIX: LINQPad integration is compiled with 4.8 assemblies.

Release Notes NCache 4.9

Thursday, February 14, 2018

Introduction

NCache 4.9 contains a few important features related to clustering and caching in ASP.NET Core. This setup also has some performance improvements and is, therefore, a recommended upgrade for all NCache users.

Enhancements and New Additions

Following are some enhancements made in this release:

1. Recovery from Split-Brain

Split-Brain is a situation where due to temporary network failures between cluster nodes result in multiple sub clusters. Each sub cluster, in this case, has its own coordinator node and does not know about the other sub clusters. This can eventually result in inconsistent data.

With NCache 4.9, users can enable the cache clusters to automatically recover from Split-Brain scenarios.

2. ASP.NET Core Response Caching

NCache's implementation of IDistributedCache utilizes Distributed Cache Tag Helper that provides the ability to dramatically improve the performance of your ASP.NET Core app by caching its responses.

3. Major Performance Improvements

There is 20-25% performance improvement in basic ADD, INSERT and GET cache operations.

4. More Features in Open Source and Community Editions

Open Source and Community editions have now same client API as Enterprise edition has. That means, all Enterprise developer features are now also available in Open Source and Community editions.

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List of Bugs Fixed:

744163 FIX: Multi-site sessions with locking enabled resets sessions when a site goes down.

744164 FIX: Eviction index size is not calculated properly.

744165 FIX: IN queries are not thread-safe.

744166 FIX: Management operations are slow.

744167 FIX: Memcache gateway and client side wrappers are missing.

744168 FIX: 32-bit applications can't initialize cache.

744169 FIX: WriteThru Provider is not called when InsertBulk API is used with DSWriteOption.WriteThru in case of inproc client cache.

Release Notes NCache 4.8

Thursday, November 2, 2017

Introduction

NCache 4.8 contains a few important features related to runtime data sharing, messaging and .NET Core. This is a recommended upgrade for all NCache users.

Enhancements and New Additions

Following are some enhancements made in this release:

1. NCache FREE Community Edition

NCache 4.8 has now launched a FREE Community and it provides the powerful GUI based NCache Manager to let you easily configure caches from a central location.

2. .NET Core Clients

NCache now provides a totally native .NET Core Client that can run on both Windows and Linux. On Windows, NCache .NET Core client is installed through a Windows Installer (.msi). However, on Linux a separate installation (.tar.gz) is provided.

3. Docker Support

NCache now fully supports Docker for both cache clients and cache servers. You can configure your .NET applications to be deployed in Docker and include NCache Client with it seamlessly.

4. ASP.NET Core Session Provider & IDistributedCache

NCache now provides full ASP.NET Core support, both on .NET Framework and .NET Core (previously it was only on .NET Framework). This support includes a powerful ASP.NET Core Session Provider that has more features than the regular ASP.NET Core Session Provider. And, it also includes support for IDistributedCache interface in ASP.NET Core.

5. Publish/Subscribe (Pub/Sub) with Topic

Publish/Subscribe (Pub/Sub) messaging paradigm is provided where a publisher sends messages into channels, without knowing who (if any) are the subscribers. And, Subscribers only receive message of their interest without knowing who the publishers are.

6. Entity Framework Core (EF Core) 2.0 Extension Methods for NCache

NCache has implemented very easy to use EF Core 2.0 Extension Methods to allow you to cache application data that you're fetching through EF Core 2.0.

7. Transport Level Security (TLS) 1.2

All communication from NCache clients to NCache servers can now be optionally secured through TLS 1.2 (a newer specification than SSL 3.0). TLS 1.2 ensures that all data traveling between NCache clients and NCache servers is fully encrypted and secured.

8. Total Cache Management Thru PowerShell

NCache traditionally provided powerful GUI based cache management tools and also a rich set of command line tools. Now, NCache has implemented all of its command-line cache management tools in PowerShell. You can now write PowerShell scripts for more sophisticated cache management.

9. Cache Client Keep Alive

Some firewalls break idle network connections which causes problems in cache client to cache server communication in NCache. Cache Client Keep Alive feature, if enabled on client node, automatically sends light a weight packet to cache servers at configurable interval (sort of a heart-beat). These packets are only sent in case of no activity between clients and servers and therefore do not interfere with regular client/server traffic.

10. Thin NCache Manager Project Files

NCache Manager used to keep some cache configuration information inside the project file. However, that used to cause data integrity issues if multiple people tried to modify cache configuration from different machines. To fix this, NCache Manager now does not store any cache configuration information inside its project files. Instead, all configuration information is kept on cache servers that are common from all places and not data integrity issue arises any more.

11. Cache Server-Only Licensing Option

Traditionally, NCache has only provided a client/server licensing option that requires both cache clients and cache servers to be licensed. However, now NCache provides an additional server-only licensing option where the cache clients do not require any licenses. Only the cache server requires licenses. If you wish to use server-only licensing, then please contact your account manager for its details.

List of Bugs Fixed:

[744156](#) FIX: Specific cache id could not be started exception occurs on starting cache. Occurs rarely.

[744157](#) FIX: Enable compression on client cache results in wrong behaviors.

[744158](#) FIX: Memory leak during state transfer.

744159 FIX: Null reference exception occurs to client while multiple add-remove operations on cache having eviction policy LFU.

744160 FIX: An already locked object is being locked when item fetched using GetCacheItem

744161 FIX: Item is locked exception occurs on removing an item with correct lock handle.

744162 FIX: A locked item could not be fetched when correct lockhandle is passed to Cache.Get() with acquireLock= false.

Release Notes NCache 4.6(Service Pack 3)

Wednesday, May 10, 2017

Introduction

NCache 4.6 SP3 contains a few minor features and client cache optimizations. There are also various bug fixes reported by customers. This is a recommended upgrade for all NCache users.

Enhancements and New Additions

Following are some enhancements made in this release:

1. SignalR Backplane with NCache

With NCache 4.6 SP3, cache can be used to distribute messages across a SignalR application that is deployed on multiple web servers.

2. Client Side Data Reader

Client side data reader is introduced which is more stable and fault tolerant during the state transfer in cache.

3. More Samples

More samples have been shipped with NCache installation. Existing samples are also refactored.

List of Bugs Fixed:

744149 FIX: Cache operations timeout if application is using threadpool extensively.

744150 FIX: State transfer takes too much time.

744150 FIX: ExecuteReader call throws statetransfer lost exception on node up or down.

744151 FIX: Value cannot be null exception when client cache is being used.

744152 FIX: "Input is not a complete block" exception is thrown on a few requests if client cache is being used with encryption enabled.

744153 FIX: Object reference exception on in-proc client cache initialization from ASP.NET application.

744154 FIX: Value cannot be null exception when client cache is being used.

744155 FIX: Caches configured for auto-start do not start automatically if security is configured on cache.

Release Notes NCache 4.6(Service Pack 2)

Tuesday, January 3, 2017

Introduction

NCache 4.6 SP2 contains a few client cache optimizations, enhancements in Bridge topology and feature related to monitoring of cache. There are also various bug fixes reported by customers. This is a recommended upgrade for all NCache users.

Enhancements and New Additions

Following are some enhancements made in this release:

12. Monitoring Cache Clients from API

A new API is introduced to monitor cache client connected with a cluster. Using this API, a list of connected clients can be fetch as well as notifications can be registered in case of any new client connects or an existing one disconnects.

13. Optimized Client Cache

Client Cache has now optimized way of synchronizing itself with the clustered cache. Instead of receiving events on each update made to clustered cache, client cache can now receive events in bulk at a configurable interval. This reduces the traffic as well as memory usage.

14. Same Name Caches across Bridge

NCache Bridge can now have caches with identical names.

15. Distributed Cache Loader

Cache Loader in NCache can now run on multiple nodes which can help in faster cache loading.

16.FIPS-Compliant AES Encryption

FIPS-Compliant AES encryption is introduced in SP2.

17. ASP.NET Core Session Provider

NCache ASP.NET session storage provider for ASP.NET Core applications is now supported.

18. Changes in Licensing

NCache is now licensed based on the number of cores a machine has. For every 4 cores, 1 license is used. Minimum of 2 licenses are used to activate a machine even if the number of cores are less than 8. For 16 cores, 4 licenses are used, for 20 cores 5 are used and for 32 cores, 8 licenses are used.

Developer licensed machines can now connect to a remote cache but with limitations on number of requests per second and total number of requests a client can make to a remote cache.

List of Bugs Fixed:

[744134](#) FIX: Client Cache with Security throws error when credentials are passed through Init Params.

744136 FIX: OperationFailedException while creating CacheSyncDependency when Clientcache and security is enabled on cache.

744137 FIX: Clientcache throws no permission exception if security is enabled on cache.

744139 FIX: A few commands are not automatically retried on failure.

744140 FIX: Bridge Exception "object is not HP time".

744141 FIX: Object reference exception on Bridge's IConflict resolver.

744142 FIX: "Key already exists" exception is thrown when caching a Parsed Query.

744144 FIX: Client side counters for Client Cache are not working.

744145 FIX: Exception "Collection was modified" occurs on GetByTag calls during state transfer.

744146 FIX: Bulk Calls return data from just one node in case of node down.

744148 FIX: Failed to replicate queue if a new node (passive) added in bridge at run time.

Release Notes NCache 4.6 (Service Pack 1)

Tuesday, May 03, 2016

Introduction

NCache 4.6 SP1 contains a few optimizations related to memory and huge improvements in performance of NCache. This is a recommended upgrade for all NCache users.

List of Bugs Fixed:

744118 FIX: Without primary or secondary credentials, NullReferenceException is thrown on management operations with security.

744119 FIX: Cache host process crashes on SecurityException while starting cache.

744120 FIX: Client.nconfg client doesn't reflect security configuration changes.

744121 FIX: On adding security credentials through manager on client node, password is visible.

744122 FIX: Clientcache throws db sync dependency exception if security is enabled on cache.

744123 FIX: Clientcache throws no permission exception if security is enabled on cache.

744124 FIX: Callbacks are not thrown on performing bulk operations with Write-Behind (i.e insert bulk and add bulk).

744125 FIX: Cacheltem is always added with version 1 after it is removed from cache resulting into data integrity issues.

744126 FIX: "Input string was not in a correct format" exception is thrown on service start for various locales.

744127 FIX: No exception is thrown if null dependency key is given.

744128 FIX: Exception is thrown on adding null subgroup.

744129 FIX: Cache host process is left unkilld between service restarts, hence resulting in multiple orphaned processes.

744130 FIX: Cache-all function for caching all queries is missing.

Release Notes NCache 4.6

Monday, December 7, 2015

Introduction

NCache 4.6 contains a few important features related to runtime data analytics, performance and memory optimization of NCache. This is a recommended upgrade for all NCache users.

Enhancements and New Additions

Following are some enhancements made in this release:

1. Object Data Format

NCache cache can now be configured to store data in objects form. By default, all data is stored in binary form.

2. Each Cache in Separate Process

Each cache in NCache is now hosted in its own process which runs independent of all other caches. Management of this process is done via NCache service which has information about all the cache processes running on the machine.

3. Map Reduce

MapReduce in NCache will allow developers to write programs that process massive amounts of unstructured data in parallel across a NCache cluster. To distribute input data and analyze it in parallel, MapReduce operates in parallel on all nodes in a cluster of any size.

4. Aggregator

Aggregator processes data records and returns compiled results. It groups values from multiple sources and can perform variety of operations like sum up values, calculating averages, finding minimum/maximum values etc. and returns single result.

5. Entry Processor

NCache provides the ability to execute users' code on server side against a set of cache entries. Entry processors can modify cache entries on the server side without involving these entries to travel on the network for fetch and update operations.

6. Data Reader

Queries can now be executed on cache using data reader just like the databases do. Using data reader, result set can be retrieved from servers in multiple chunks of configurable size. This approach gives a better performance and uses less memory on client end.

7. Default Expiration

User can now configure NCache with default named expirations. NCache server will use default expirations when items are either inserted into cache without any expirations or inserted explicitly with named default.

8. Order-by Clause

Select statements can now have orderby clause which will return the result set sorted on one or more specified attributes.

9. Log Viewer

A GUI tool to view and monitor logs generated by NCache server and clients in one place. Log files of all servers can be viewed in same tool. The tool can filter log entries and important log entries can also be bookmarked.

10. LIVE Upgrade

NCache 4.4 SP2 can be upgraded to NCache 4.6 without losing any data using its Bridge topology.

11. Core Based Licensing

NCache 4.6 onwards, cache servers and clients will be licensed based on the number of cores instead of numbers of CPUs that box has.

Release Notes NCache 4.4 (Service Pack 2)

Tuesday, July 28, 2015

Introduction

NCache 4.4 SP2 contains a few important enhancements related to memory and performance of NCache. This is a recommended upgrade for all NCache users.

Enhancements and New Additions

Following are some enhancements made in this release:

1. DumpCacheData Tool

Dumpcachedata tool takes a dump of a running cache by enumerating cache data and stores this data on a location specified by user. This data can later be reloaded to a new or same cache. This tool is helpful when customers need to restart their cache servers while they don't want to lose their business critical data in cache.

2. DumpCacheKeys Tool

DumpCache tool is renamed to DumpCacheKeys.

3. LinqPad Integration

LinqPad is a third party tool that can be used with NCache to query cache data. Data is shown on LinqPad console in a tabular form.

4. HotApplicable Settings in Service Configuration

There are a few settings at service config level that now can be hot applied to caches running on a server. Previously, service restart was needed to apply settings defined in service configuration file. The list of HotApplicable settings is as follows:

#	Property Name	Hot Applicable
1.	NCacheServer.LicenseLogging	Yes
2.	NCacheServer.EnableNagling	Yes
3.	NCacheServer.NaglingSize	Yes
4.	NCacheServer.EventBulkCount	Yes
5.	NCacheServer.ExpirationBulkRemoveSize	Yes
6.	NCacheServer.ExpirationBulkRemoveDelay	Yes
7.	NCacheServer.EvictionBulkRemoveSize	Yes
8.	NCacheServer.EvictionBulkRemoveDelay	Yes
9.	NCacheServer.BulkItemsToReplicate	Yes
10.	NCacheServer.EnableCacheLastAccessCount	Yes
11.	NCacheServer.EnableCacheLastAccessCountLogging	Yes
12.	NCacheServer.CacheLastAccessCountInterval	Yes
13.	NCacheServer.CacheLastAccessLogInterval	Yes
14.	NCacheServer.LOHPoolSize	Yes
15.	NCacheServer.LOHPoolBufferSize	Yes
16.	NCacheServer.CacheSizeThreshold	Yes
17.	NCacheServer.CacheSizeReportInterval	Yes
18.	NCacheServer.LogClientEvents	Yes
19.	NCacheServer.EventLogLevel	Yes
20.	NCacheServer.AllowRequestEnquiry	Yes
21.	NCacheServer.RequestEnquiryInterval	Yes

22.	NCacheServer.ResponseDataSize	Yes
23.	NCacheServer.EnableSnapshotPoolingCacheSize	Yes
24.	NCacheServer.SnapshotPoolSize	Yes
25.	NCacheServer.SnapshotCreationThreshold	Yes
26.	NCacheServer.RequestInquiryCleanInterval	Yes

5. **Optimizations in Client Cache**

A few architectural changes are made in client cache to have a better performance in case of bulk operations.

List of Bugs Fixed:

[744113](#) FIX: Operations are not retried in case of connection failures or other internal exceptions. Instead these exceptions are thrown to client applications.

[744114](#) FIX: Eviction is turned off by default.

[744115](#) FIX: Session locking is turned off by default.

[744116](#) FIX: NCache Manager allows non-admins to perform administrative operations.

[744117](#) FIX: Activation tool crashes while activating machines with more than or equal to 32 cores.

Release Notes NCache 4.4 (Service Pack 1)

Monday, April 04, 2015

Introduction

NCache 4.4 SP1 contains a few new features as well as important enhancements related to memory and performance of NCache. This is a recommended upgrade for all NCache users.

Enhancements and New Additions

Following are some enhancements made in this release:

1. Visual Studio Integration

Basic management and configuration operations can now be performed within the Visual Studio. With NCache 4.4 SP1, the Developer installation comes with an 'NCache Manager' extension which helps developers manage NCache from Visual Studio. Visual Studio 2010/2012/2013 are supported by NCache.

2. NuGet Package for NCache Enterprise 4.4 SDK

A NuGet package is provided for developers to build applications using NCache without installing NCache on their machines. With this package, developers can write their applications using NCache API and test them with InProc cache.

3. Entity Framework 6.0 Support

Entity Framework 6.0 and 6.1 integration is provided in NCache 4.4 SP1. Previously, NCache supported Entity Framework 5.0 or earlier. In this service pack, NCache also provides caching extensions for Entity Framework 6.0 which allows developers more control over which entities to cache. This is an alternate to no-code-change configuration option for developers who want to have a greater control over the entities being cached.

4. Memory and Performance Optimizations

NCache 4.4 SP1 uses customized data structures which are enhanced to take up less memory and perform better than .NET's native data structures. These data structures avoid allocations on Large Object Heap (LOH) as much as possible to prevent NCache processes from entering into a state of severe memory fragmentation. Hence, NCache 4.4 SP1 has a major boost for both memory and performance.

5. Split-brain Monitoring

Network partitioning or split-brain occurs when the cluster gets divided in such a way that some of the servers are unable to connect with the rest of servers. These instances are now logged into event viewer and email alerts for such scenarios can also be configured from NCache Manager.

6. Windows Server 2012 R2 Certification

NCache 4.4 SP1 is certified for Windows Server 2012 R2. It has passed all Microsoft's compatibility tests. Microsoft validated that NCache works in accordance with Microsoft's standards.

List of Bugs Fixed:

744105 FIX: A few user specific NCache settings are saved to the HKLM section of the registry which throws errors in secured environments.

744106 FIX: Java client in Developer edition cannot connect to cache.

744107 FIX: NActivate shows NCache is successfully activated on the machine although it failed to save its activation information into the registry due to restricted rights.

744108 FIX: Aggregate dependency does not work when an item is added with both Aggregate dependency and Sliding dependency.

744109 FIX: NCache crashes during state transfer in some scenarios.

744110 FIX: Data sharing between Java and .NET clients does not work because of case-sensitivity of cache name specified in configuration.

744111 FIX: GetIfNewer does not reset item version when client cache is configured.

744112 FIX: NCache installation rolls back on its failure to start NCache service.

Release Notes NCache 4.4

Wednesday, January 08, 2015

Introduction

NCache 4.4 contains some important enhancements and few major bug fixes related to the stability of the cache. It is a recommended upgrade for all users.

Enhancements and New Additions

Following are some enhancements made in this release:

1. Annual Licensing

NCache licensing has been moved to Annual licensing model from previously supported perpetual model.

2. Memory optimization of internal data structures

Internal data structures are optimized to reduce the memory overhead of stored items.

3. Cluster startup time improvements

Huge improvements in cluster startup time for cluster sizes over 20 nodes.

4. New perfmon counter for memory usage

New perfmon counters are introduced to measure the memory acquired by various indexes. Following are the brief descriptions of each of them.

Eviction Index Size: Size of eviction indices defined on the cache.

Expiration Index Size: Size of expiration indices defined on cache. (All dependencies meta info is also covered under this counter like meta info of 'Key Dependency', 'SQL Dependency' etc...)

Group Index Size: Size of group and sub group indices

Query Index Size: Size of query indices defined on cache.

NOTE: "Cache Size" counter now includes the size of actual key, value pair and the memory utilized by above mentioned indexes.

5. OQL related new perfmon counters

OQL related new perfmon counters are also introduced to measure the performance of the query related cache operations like:

Average μ s/Query Execution: Average time query take while executing.

Average Query Size: Average Number of items returned by queries.

Queries/sec: Number of queries per sec on cache.

6. Support for Windows Server 2012 R2

NCache is now fully compatible with Windows Server 2012 R2.

List of Bugs Fixed:

744101 FIX: Timeouts to some of the connected clients on server node join.

744102 FIX: Item loss in partitioned-replica of two nodes, when one of them goes down while each node has more than 50% of cache filled.

744103 FIX: NCache Manager lists down IPv6 addresses on multiple NIC configuration dialog.

744104 FIX: Few other minor bug fixes in command line tools.

Release Notes NCache 4.3 (Service Pack 1)

Wednesday, June 30, 2014

Introduction

NCache 4.3 Service Pack1 (SPs) contains some important enhancements and major bug fixes related to the stability of the cache. It is a recommended upgrade for all NCache 4.3 users.

Enhancements and New Additions

Following are some enhancements made in this release:

1. Client side logging is configurable through client.nconf file

You can configure the client side logging by modifying the client.nconf file (exists at %NCHOME%/config folder. By default client-side logging is disabled for all caches, but you can enable client side logging for a cache at any time by specifying the 'true' value for 'enable-client-logs' e.g.

```
<cache id="mycache" ... enable-client-logs="false|true" log-level="error|info"/>
```

Possible values for 'enable-client-logs' attribute are 'false' and 'true'. Default value is 'false'.

Possible values for 'log-level' attribute are 'error' and 'info'. Default value is 'error'.

2. Support for remote clients on a different network

Now NCache clients from a different or remote network can also access the cache which exists on a different network. To achieve this just add the following two tags in 'Alachisoft.NCache.Service.exe.config' files at the cache server nodes.

```
<add key="NCacheServer.MgmtEndPoint" value="public-ip:public-port" />
<add key="NCacheServer.ServerEndPoint" value="public-ip:public-port" />
```

Where the public-ip is ip-address which is exposed outside the network and public-port is the port which is accessible outside of the network.

3. Client caches are browsable in NCache Manager

Client caches were previously only visible in NCache Manager under their respective second level (2nd level) caches, but now you can view the existing client cache in NCache Manager under the 'Local Caches' tree node of the 'Cache Explorer'.

4. Email Alerts for out-proc local and client caches

Email alerts are supported for out-proc local caches and out-proc client caches. You can select the events on which NCache would send you email notification e.g. on Cache Start, on Cache Stop etc.

5. Client caches can be configured from outside of cache cluster network

Client caches can be configured from outside the cache cluster network using command line tools e.g. CreateClientCache, AddClientNode etc.

6. Support for Windows Server 2012

NCache is now fully compatible with Windows Server 2012.

7. Java client for NCache

NCache provides Java client API to use the NCache as cache store from within the Java based applications. NCache Java client is fully compatible with .NET client API.

List of Bugs Fixed:

743101 FIX: NCache service crashed while using DELETE query with client cache.

743102 FIX: GetCacheItem() API cause the problem when used with ItemVersion.

743103 FIX: NCache Manager is not able to apply configurations when 'CacheLaoder' is enabled but not configured.

743104 FIX: Cache returns the item for invalid sub-group.

743105 FIX: Null reference exception on calling Remove/Delete (key, version) for non-existing key.

743106 FIX: State transfer is not working if read-through is configured and write-through provider is not configured or vice versa.

743107 FIX: 'Request Queue Size' client counter never return to zero.

Release Notes NCache 4.3

Wednesday, March 05, 2014

Introduction

NCache 4.3 has introduced new features and important enhancements that are critical for enterprise level applications. This new release allows NCache to be installed in cloud; on Windows Azure and Amazon. Also, a wrapper for Memcached is now available for existing users wanting to replace Memcached with NCache. This new release provides a package for run time data sharing between multiple platforms (Java & .Net). Java has been made 100% compatible with .NET and now you can manage your Java clients with NCache Manager.

Enhancements and New Additions

For a comprehensive list of all features in 4.3, please read [NCache Features](#):

1. Events with Data

While registering events with cache, cache clients can tell the cache whether they are interested in data or metadata when the events occur. By default, data or metadata are not sent with the events to clients.

New API to register events has been introduced while old API has been marked obsolete. Old API can't be used to receive data with events.

2. Write-through/Write-behind Enhancements

Write-through and write-behind can now be configured for following behaviors:

- a. Batching – Where multiple write-behind operations can be batch written to the database after a configurable interval. The maximum number of items in a single batch is also configurable.
- b. Keep failed operations – Providers can now dictate whether to keep an item in the cache or not even if it is failed on database.

3. Group-by for Queries

Queries can now be registered with 'Group by' clause as in database to group the results as needed.

A new API has been introduced for this method. Currently, this new method '[ExecuteReader](#)' in the API can only be used if 'group by' is used. For all other select statements, old method should be used.

4. Delete Statement in Queries

As in database, now items can be removed from cache by writing delete statements. Previously, only select and update statements were supported.

A new API has been introduced to support delete statement. [ExecuteNonQuery](#) will be used for delete statements.

5. Graceful Node Stop

A node can now be gracefully stopped in a cluster. This action will make sure that all client requests that have reached the node are executed on cache before it comes to complete stop. Similarly, all write behind operations pending in the queue at that time are also executed on the data source. However, no more client requests are accepted by this node.

6. Encryption Enhancements

Following enhancements are made to the encryption feature:

- a. AES-128, AES-192, AES-256 encryption is supported.
- b. When encryption is enabled, indexed data is also encrypted.

7. **Compact Serialization Enhancements**

Following enhancements have been made to compact-serialization:

- a. Users can select and de-select the data members to be compact serialized.
- b. Byte arrays are no more serialized.
- c. Compact types are hot-appliable.

8. **Enhanced CacheInitParams**

`CacheInitParams` while initializing cache can now cover everything that can be configured in `client.nconf`. Previously, `client.nconf` was always required to initialize a cache. Configurations passed through `CacheInitParams` have an overriding effect on the settings configured in `client.nconf`.

9. **De-serialized Data in InProc**

InProc cache now keeps objects in de-serialized form. This removes the cost of serialization and de-serialization and hence, improving the performance. InProc client caches also keep objects in de-serialized form.

10. **API Calls Logging**

API calls can now be logged by just configuring few options in client configuration. These logs are generated on the client boxes and are very helpful to determine which cache methods are being called and in what sequence.

11. **Configurable Log Locations**

Users can configure to generate the log files at the location of their own choice. Each cache can have its own log location. By default, all log files will be generated in the log-files folder of install directory.

12. **Switch between Active/Active and Active/Passive Bridge Topologies**

While adding caches to bridge, users can configure a cache to participate as an active or a passive member of bridge. Even when bridge is up and running, users can turn a passive into active and an active into passive without losing any data. User experience to configure a bridge is also changed as the topologies in bridge can be switched between Active-Active to Active-Passive at any time. Other topologies 'Star' and 'Hub-spoke' are currently not available in bridge.

13. **Master Cache in Bridge Topology**

User can pick one of the two caches in bridge as a 'Master cache'. Whenever, there is a need for a state transfer between caches in bridge, data is transferred from a master cache to the non-master. When the master cache goes down, the only remaining cache becomes master automatically.

14. **Connect/Disconnect Caches in Bridge Topology**

Cache administrators can temporarily connect and disconnect caches from the bridge while bridge is running. When a cache is disconnected, no data is transferred between bridge and the disconnected cache. Similarly, the cache on the other side of the bridge stops queuing data to the bridge as the disconnected cache is no more receiving any data.

Cache can be reconnected at any time.

15. **Socket Protocol Management**

Communication protocol for management and monitoring operations are changed to 'Socket' from '.Net Remoting'. This makes NCache and JvCache's management and monitoring tools inter-compatible.

16. **NCache Manager Compatibility**

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NCache Manager can now be used manage JvCache clients as well. NCache Manager can also fetch SNMP counters for JvCache clusters.

17. **Connect to Remote Perfmon via machine name or IP address**

We have observed that in some environments, remote perf counters are accessible via their machine names only and on a few via their IP addresses. So in this version of NCache, NCache Manager has an option where user can pick to collect remote perf counters via their IP or machine name.

18. **DLLs Locking Issue Resolved**

NCache Manager used to lock the dlls when query indexes were configured by the users. In this version, NCache Manager opens the given dlls in a separate app domain and therefore, never locking the dlls.

19. **ReportView Control for NCache Monitor**

There is another type of dashboard available in NCache Monitor that allows users to create a report view style dashboard. In this dashboard, users have two report controls. One is for cache server nodes, while other one for client nodes. Users can drop the counters in this control and their values are shown in a report view style as shown in perfmon.

20. **Logging of Counters in NCache Monitor**

Counters added in report view can also be configured to be logged. Users can start and stop logging at any time. They can also schedule the logging to start automatically by specifying the start and stop time. These log files are generated in .csv format.

21. **NCache Monitor Compatibility**

NCache Monitor can now also be used to monitor JvCache. Depending upon whether the selected cluster is of NCache or JvCache, it fetches counters from perfmon or SNMP respectively.

22. **New Command Line Tools Added**

Following new command line tools are added to NCache:

1. Create Cache: Configure Cache Tools is now changed to Create Cache Tool. It will handle 2 cases.
 - a. Simple case: In this case it will take minimum required parameters (i.e. cache name, server, port, topology, size, eviction policy etc.) and create a cache with default values (like NCache Manager).
 - b. Advance case: In this case a configuration file containing cache settings will be taken as parameter with server list on which cache will be created.
2. Add Backing Source: It will take cache id, assembly path, class name, provider name, read thru/write thru option and also dependent assembly folder as input parameter.
3. Add Startup Loader: It takes cache id, assembly path, class name and also dependent assembly folder as input parameters.
4. Add Compact Types: It takes cache id, assembly path, class name and also dependent assembly folder as input. If Specified class is the implementation of [IGenericTypeProvider](#), this will register generic type through implemented provider.
5. Add Query Index: It takes cache id, assembly path, class name, attribute/attribute list and also dependent assembly folder as input.
6. Remove Backing Source: It takes cache id, server, provider name and read-through/write-through option as input parameters. It will remove backing source from specified cache on all registered nodes.

7. Remove Startup Loader: It takes cache id and server as input parameters and remove startup loader from specified cache on all registered nodes.
8. Remove Compact Types: It takes cache id, server and class as input parameters and remove specified compact type from cache on all registered nodes.
9. Remove Query Index: It takes cache id, server and class name/attribute(s) as input parameters and remove specified query index from cache on all registered nodes.
10. Add Data Share: It takes a configuration file containing data sharing configuration (mapping between 2 assemblies/jar files), cache id, server and dependent assembly folder as input parameters.
11. Remove Data Share: It takes cache id and server as input parameters and remove data sharing type from cache on all registered nodes.
12. Get Cache Configuration: It takes cache id, server and path (where file containing cache setting should be created) as input parameters. This tool will generate only cache settings (environment independent settings) in a file named as cache id on specified path.
13. Deploy Assembly: It takes cache id, server and assembly/folder path as input parameters. Specified assembly will be deployed on all registered servers of cache. If folder path is specified, then all assemblies in that folder will be deployed.

23. Memcached Wrapper for NCache

Existing Memcached users can now switch to NCache without code change. There are two ways to replace memcached with NCache:

1. Memcached Gateway

This gateway is installed on client and server boxes as a windows service. It is an implementation of memcached protocol which wraps the NCache calls inside it. This way, all API calls from memcached clients are routed to NCache servers via this gateway.

Only configuration changes are required in this approach.
2. Memcached Plug-In

Some of the open source client implementations for memcached are modified to work with NCache servers while keeping their API as is. The source and binaries of these implementations are shipped with NCache installation.

Following memcached client implementations are supported in this approach:

- a. Enyim
- b. BeIT
- c. .NET Memcached Client Library

24. NHibernate Integration

NHibernate integration is written from scratch to remove the limitations of previous implementation. Following are the few enhancements made in new implementation:

- a. There is only one configuration file for all NHibernate applications.
- b. Settings can now be configured at region level. Each class in that region will use these settings.
- c. Clearing on region now clears only the entries residing in that particular region.

25. ASP.NET OutputCacheProvider Hooks

Users can now write their own code to modify the cache items before they are inserted in NCache. Users can change the expiration, dependencies etc. of output cache items by writing these hooks.

For this, users have to implement an interface provided with [OutputCacheProvider](#) and then register this assembly and class in web.config.

26. Tagging of Cached Items

All items cached from various NCache integrations are tagged with special tags that determine the type of cache items. For example all sessions created in cache have a special tag that tells it's a session cache item. This way users can identify any item in cache whether it's a session or not.

Similarly, [OutputCache](#) and [ViewState](#) items are also tagged with their own tags.

Release Notes NCache 4.1 (Service Pack 3)

Tuesday, October 24, 2013

Introduction

NCache 4.1 Service Pack3 (SP3) contains some important enhancements and major bug fixes related to the stability of the cache. It is a recommended upgrade for all NCache 4.1 users.

Enhancements and New Additions

Following are some enhancements made in this release:

1. Operation retries in session store provider

NCache session store provider for ASP.NET session caching now has the ability to retry any cache operation if operation fails.

Add the following attributes in the NCache session store provider settings:

```
operationRetry="3"
operationRetryInterval="3000"
```

'OperationRetryInterval' attributes takes the value in w seconds.

2. Operation retries in object cache provider

NCache Object Cache provider for .NET4x now has the ability to retry any cache operation if operation fails.

Add the following entry under the `<appSettings>` in application config file (app.config or web.config) like:

```
<add key="operationRetries" value="3"/>
<add key="operationRetryInterval" value="2000"/>
'operationRetryInterval' is the value in milli seconds
```

3. Viewstate grouping page-wise

A new feature is implemented in ViewState caching, which allows grouping of viewstate of related pages. This will provide more control for viewstate caching. Using this feature it is possible to cache different groups of viewstate in different caches, or cache viewstate using different expirations for each group of viewstate.

4. Maximum ViewState to cache, per session

This enhancement in NCache ViewState caching module provides the option to restrict the number of viewstate per page in cache.

Add the 'maxViewStatesPerSession' attribute in the '`<settings ...>`' tag under the '`ncContentOptimization`' tag. This attribute take value in integers.

5. Delay in cache startup loader

At Cache start, Cache startup loader is not started instantly. Its start is delayed for 20 seconds after cache start. This delay is configurable by using the following attribute in 'Alachisoft.NCache.Service.exe.config' file:

Add the following entry under the `<appSettings>` in NCache service config file like:

```
<add key="NCacheServer.CacheLoaderStartupDelay" value="20"/>
```

Default value for this attribute is 20 seconds.

6. Delay between auto-start caches

To avoid partial cluster connectivity problems when caches are started simultaneously using auto-start feature, a delay can be introduced.

Add the following entry under the `<appSettings>` in NCache service config file like:
`<add key="NCacheServer.CacheStartDelay" value="3"/>`

Default value for this attribute is '3 seconds'.

7. Suppress IndexNotDefinedException

'IndexNotDefined' exception is thrown to the client, when it queries an attribute that is not indexed. This problem can occur easily when NamedTags are used as indexes are created for NamedTags at runtime. Now it is configurable to suppress this exception.

Add the following entry under the `<appSettings>` in NCache service config file like:
`<add key="NCacheServer.DisableIndexNotDefinedException" value="true|false"/>`

8. NCache client apps can consume cache generated events 'Synchronously' or 'Asynchronously'

Client app can be configured to consume all of the received events 'Synchronously' or 'Asynchronously'. Default event consumption mode for NCache Client is 'Asynchronous' but events can be consumed on client side 'Synchronously'.

Add the following entry under the `<appSettings>` in client application 'App.config' file like:

```
<add key="NCacheClient.AsynchronousEventNotification" value="true|false"/>
<add key="NCacheClient.NumberOfEventProcessingThreads" value="2"/>
```

For synchronous event processing mode, in this example 2 threads are used but it is configurable to adjust the event processing needs according to the client application requirements. Default minimum value is '1' and default maximum value is '5'.

9. More perform based counters for cache and cache client

New Server Side Counter

- **Response Queue Count:** Number of items in response queue, all responses are queued in this queue before actual send.
- **Response Queue Size:** Size of response queue specified in bytes. Data size of all the responses in the queue.
- **Event Queue Count:** Number of events in event queue.

New client side counters

- **Events Processed/sec:** Number of events processed per sec on client.
- **Events Triggered/sec:** Number of events triggered and Received by client per second
- **Average ms/event:** Average time taken in single event processing on the client.

10. Cache clear will fire ItemRemoved events for all registered ContinuousQuery if some data exist in a ContinuousQuery resultset.

Now cache clear call will fire the ItemRemoved events for all those keys which exist in a ContinuousQuery result set.

11. Client cache now manage its own expiry

If there is a client cache enabled and a lot of items are being expired from the L2 cache then L2 sends item expiry events to client cache (L1 cache) to remove these items from its local store. This hurts the performance of active clients and utilizes

high CPU. Now client cache (L1 Cache) will also maintains the expiry of items, and L2 cache will not send the expiry events to L1 cache.

12. EntityFramework caching enhancements

NCache provided EFCaching module is enhanced for EF query analysis and caching.

13. Auto Start Bridge on bridge service start

Now bridge service can be configured to start the specified bridges on service start. To configure a bridge to start automatically when a bridge service (Alachisoft.NCache.Bridge.exe) gets started / restarted. Uncomment the following tag in '*Alachisoft.NCache.BridgeService.exe.config*' file and provide the bridge name(s) which are configured on current machines, like:

```
<add key=" NBridgeServer.AutoStartBridges" value="Bridge-1,Bridge-2"/>
```

List of Bugs Fixed:

741301 FIX: Connection failover problem in replicated topology, if other server nodes info is not available in '*client.nconfig*' file at client machine then client was unable to connect to other server.

741302 FIX: Not all ContinuousQuery notifications are delivered to the client application in case there is a change in an item that falls under a query.

741303 FIX: ContinuousQuery notifications (ItemAdded, ItemUpdated, ItemRemoved) are not fired after clearing the cache.

741304 FIX: Performance degradation in ContinuousQuery with Add, Update & Remove operations. Now Continuous query will be evaluated for each operation 'Asynchronously'.

741305 FIX: NCache bulk operations that were consuming a lot of NCache process memory due to LOH occupancy and results in timeouts and memory issues. Now NCache divide the large responses into multiple chunks of 512kb and this will help to reduce the memory issues.

741306 FIX: All server information gets removed from '*client.nconf*' file on cache client nodes on updating the cache settings if cache is configured to use multiple NIC's.

741307 FIX: NCache manager was not showing the active directory user after 1000 user count.

741308 FIX: NCache.caches[] API returns only the clustered cache (L2 cache) handle even though it has a client cache (L1 cache).

741309 FIX: ConfigureCacheSecurity command line tool does not work properly, when node level security is enabled.

741310 FIX: EF Caching analysis report is not generated if application exist before analysis time.

741311 FIX: NActivate tool does not work on boxes with 32 cores.

741312 FIX: Bridge: State-transfer started when a server node left the source cache [Active-Passive].

741313 FIX: Bridge: Item version mismatch problem when active-node goes down.

741314 FIX: Bridge: Data replication occurred twice if coordinator-node of the target cache goes down.

741315 FIX: Bridge: Replication stops if the source cluster faces some connection issue due to network.

741316 FIX: Bridge: No replication across the bridge, if cluster caches started before the bridge.

741317 FIX: Bridge: State-transfer initiated from target to source, if coordinator node of the target cache left the cluster.

741318 FIX: Bridge: Target cache is cleared when bridge reconnected or target cache reconnected with the bridge due to connection lost on WAN.

741319 FIX: Bridge: Bridge Queue count is not displayed for bridge active node.

741320 FIX: Bridge: Some other problems related to state-transfer and data mismatch are also fixed for 'Active-Passive' and 'Active-Active' bridge topologies.

Release Notes NCache 4.1 (Service Pack 2)

Tuesday, October 10, 2012

Introduction

NCache 4.1 Service Pack2 (SP2) contains some important enhancements and major bug fixes related to the stability of the cache. It is recommended upgrade for all NCache 4.1 users.

Enhancements and New Additions

Following are some enhancements made in this release.

1. Data Encryption

Encryption feature is provided to make sure that data traveling between NCache client and NCache server or between cluster nodes is encrypted. This will prevent the user data leakage even if data packets are sniffed from the network.

2. Multiple database dependencies are allowed on single item

Now multiple database dependencies can be added for single cached item. This feature will compensate the 'SQL Notification' dependency limitation of a single database dependency.

3. Auto start delay for caches

Caches which are configured to 'auto start' now can be delayed according to user specified time. This will improve the NCache response time in case there are too many caches configured for 'auto start'.

Add the following entry under the `<appSettings>` in NCache service config file like:
`<add key="NCacheServer.AutoStartDelay" value="5"/>`

4. Auto start of client caches

Now you can configure the 'client caches' to start automatically on service restart or when client machine is rebooted. This will make the client cache available without user intervention.

5. Viewstate can be associated with session

Now viewstate is cached along with 'session id' as 'group' info. This will facilitate the user to relate the viewstate and session of the same application and user. Using this feature user can remove all the viewstate related to a specific session when a session is closed or expires.

Add the following attribute inside `groupedViewStateWithSessions="true|false"`

List of Bugs Fixed:

[741201](#) FIX: Extra GC collection calls in SSP module which caused a performance overhead.

[741202](#) FIX: Session size increase 3 times after serialization.

[741203](#) FIX: Viewstate crashed the application if viewstate logging is turned off.

[741204](#) FIX: View State Caching with Ajax causes problem in page loading.

741205 FIX: Cluster get partially connected if cache name of cluster nodes is not in same case.

741206 FIX: Newly added server info is not updated in `client.nconf` file at client nodes.

741207 FIX: Cache initialization problem from inside of SQL CLR based stored procedure.

741208 FIX: Local cache cannot be run on a loop back IP (127.0.0.1) in developer edition.

741209 FIX: Dead lock occurred if clients are frequently connected/disconnected.

741210 FIX: General Notification stop working if cache is not disposed.

Release Notes NCache 4.1 (Service Pack 1)

Tuesday, May 10, 2012

Introduction

NCache 4.1 Service Pack1 (SP1) contains some important enhancements and major bug fixes relating to the stability of the cache. It is commended upgrade for all NCache 4.1 users.

Enhancements and New Additions

Following are some enhancements made in this release.

1. **Generics types support for Compact Serialization**

You can add custom generic types for compact serialization. All generic types with any number of arguments can be serialized through compact serialization. You can register generic types through NCache Manager or through a custom handler by implementing the interface *IGenericTypes*. Currently, this feature is only available in for .NET clients.

2. **Update CacheItem hint at runtime**

You can now modify cache item attributes at runtime without modifying the data. Currently, the API (*SetAttribute*) allows you to update dependency and expiration hints.

3. **UTC support for Different Time zones**

You can have cache servers as well as clients running under different time zones; NCache will maintain a standard time to expire an item on the basis of local time zone. Whenever an item replicates or moves from one cache server to the other the expiration is reset according to the local time zone hence makes the item expiration possible according to the configured timeslot.

List of Bugs Fixed:

[741101](#) FIX: Client was unable initialize NCache through a SQL CLR based procedure or trigger.

[741102](#) FIX: Object ref exception if only *WritBehind* is configured for a cache and *WithThru* operation is performed in API.

[741103](#) FIX: Output caching in 2-node web-farm, item is deleted from cache if 2nd request goes to 2nd node of the farm.

[741104](#) FIX: Query parser throws buffer overflow if the query length exceeds 256 characters.

[741105](#) FIX: *GetGroupsKeys*, *GetBulk*, *Tags*, *Query* does not return correct results during state transfer.

[741106](#) FIX: In case of partition topology only one server was sending general notifications to remote clients.

[741107](#) FIX: *NamedTags* query throws exception "Index not defined" if only one item is added in partitioned cache.

741108 FIX: Java client throws exception that it is unable to read client.ncconf file even though you have provided the cache-id, server-ip and port through the API.

741109 FIX: Slow response on right clicking a cache server.

741110 FIX: Content optimization log file was not generated.

741111 FIX: Licensing does not work on machines with 32 or more cores.

741112 FIX: AddDependency() resets the existing dependency instead of appending a new dependency.

741113 FIX: Client Application does not receive updated hash-map when a network is disabled on the cache server.

741114 FIX: Security was using case sensitive username.

741115 FIX: Cluster becomes partial and sometimes also unresponsive. This happens when machine is rebooted and cache from that server tries to join the cluster again, before cluster has removed this server from its cluster membership.

Release Notes NCache 4.1

Tuesday, August 23, 2011

Introduction

NCache 4.1 has introduced very important new features and enhancements that are critical for enterprise level applications. This new release gives a whole new package for run time data sharing between multiple platforms (java & .Net). Java has been made 100% compatible with .NET and now you can even plug-in your Java code with NCache process. NCache request-response model has also been enhanced to handle large responses where GBs of data can be retrieved from the clustered cache in a single request. All the bugs that were reported in earlier release have been fixed in this release.

Enhancements and New Additions

For a comprehensive list of ALL FEATURES in 4.1, please read [NCache Features](#):

1. Runtime Data Sharing between .NET & Java

NCache now allows you to store either .NET objects in the cache and read them as Java objects from your Java applications, or vice versa. And, instead of doing .NET to Java transformation through XML, NCache uses binary-level transformation. As a result, the performance is super fast. NCache automatically resolves type conflicts between Java and .NET.

You can also utilize multiple versions in Runtime Data Sharing between .NET and Java. See details below.

2. Multiple Objects Version Support (.NET & Java)

You can now share multiple versions of the same .NET or Java classes across multiple applications. One application may be using version 1.0 of a class while another application may have a later version 2.0 of this same class. When version 2.0 of this class is stored in the cache, the earlier application can still fetch this class as version 1.0, and vice versa. NCache lets you configure version mappings through XML configuration files.

You can utilize version also in Runtime Data Sharing between .NET and Java.

3. Continuous Query (.NET & Java)

NCache lets you specify a data-set based on an SQL-like query. It then maintains this data-set in the cache cluster for you and monitors any runtime changes in it, including Additions, updates, or deletes. And, NCache notifies your application whenever any of these changes occur in the dataset. This allows your applications to more intelligently monitor for either data changes or addition of data matching a certain criteria and be notified by NCache.

This is a powerful feature if you want to share data at runtime between multiple applications.

4. Much Enhanced Bridge Topology

Bridge Topology allows you to intelligently and asynchronously replicate the entire cache across the WAN. NCache 4.1 now offer four different configurations in Bridge Topology. They are:

1. **Active/Passive:** In this configuration, one cache is active and the other passive. Whatever updates you make to the active cache are asynchronously applied to the passive cache by the Bridge. Since the connection between active

and passive is across the WAN, it is likely to be unstable. But, the Bridge is aware of it and if the connection breaks, it automatically reestablishes it.

2. **Active/Active:** In this configuration, both caches are active and the Bridge receives update requests from both sides. Both caches are also maintaining an identical "clock" for time-stamping. This clock is synchronized through the Bridge. Whenever there is a conflict, meaning the same cache item is being updated in both caches, it is resolved by default on a last-update-wins strategy. But, if you want, you can provide a custom resolution handler which is invoked in case of a conflict. You can then determine which update should stay and which one should be discarded.
 3. **Hub-Spoke:** In this configuration, there is one active Hub and multiple passive Spokes (or satellite caches). All updates originate from the Hub and are asynchronously applied to all the Spokes. The Spokes are always read-only.
 4. **Star:** This configuration looks identical to a Hub-Spoke except that all the Spokes are also active. In this configuration, there is one centralized cache and multiple satellite active caches. All updates are synchronized through the centralized cache to ensure consistency.
5. **Named Tags (.NET & Java)**
Previously, you could only assign tags as values. Now, you can assign tags with names. This allows you to index data based on attribute name and attribute value concept. Previously, you could index objects but all string data could not be indexed. Now, even string data (e.g. XML) could be indexed with named tags. Then, you could either use NCache API to fetch data belonging to one or more named tags or you could issue SQL-like query (through LINQ or OQL) for it.
6. **Java Features Now 100% Equivalent to .NET**
NCache 4.1 brings support for Java at the same level as .NET. Here are the new Java based features intended to catch up to .NET feature-set:
- **Java Client API 100% equivalent to .NET**
 - **Java Client Cache (InProc):** You can now use Client Cache feature in Java applications on Windows or Unix. There is no code change required in your applications to enable Client Cache.
 - **Read-Thru, Write-Thru, Write-Behind in Java:** You can now write your Read-Thru and Write-Thru handlers in Java and register them with NCache. NCache runs your native Java code on the cache servers just like it does with .NET code.
 - **Cache Loader in Java:** Write your cache loading code in Java and register it with NCache. Your native Java code will run on cache servers just like the .NET code.
 - **Dynamic Compact Serialization for Java:** Now, you can register your Java classes with NCache and NCache generates their serialization code at initialization time, compiles it in-memory, and sends it to NCache clients. This compiled Java code is then run to serialize/de-serialize your Java classes. This obviously speeds up your performance because compiled serialization code runs much faster than Reflection based serialization that is otherwise done in Java.
 - **Spring/Hibernate Support:** NCache now provides an L2 Cache for Hibernate. This allows you to start using NCache without making any code changes in your Java application.

7. Multi-Response Model

NCache now allows the cache servers to return larger response in smaller chunks for a given request. This improves the overall cache performance because the serialization cost reduces with the size and also helps applications to fetch larger data sets in a single call. It also eliminates the .NET serialization limitation where it fails to serialize data size larger than 1.9 GB. Response threshold and chunk size both are configurable and can be modified from NCache service config file "NCache\bin\service\Alachisoft.NCache.Service.exe.config"

```
<!-- Response size in MB -->
<add key="NCacheServer.ResponseDataSize" value="1024"/>
```

List of Bugs Fixed:

741001 FIX: When using Client-Cache GetCacheItem returns incorrect Group name.

741002 FIX: Object Query does not work if the IN operator has just one parameter e.g
 Select Northwind.Customers where this.City In(?).

741003 FIX: Alachisoft.NCache.Web.dll is missing in "4.0 GAC" folder in 64 bit remote client installation of NCache

741004 FIX: Alachisoft.NCache.Security.dll (32 bit) missing in Developer installation.

741005 FIX: When a node joins the cluster the State transfer throws an object reference not set exception in cache server log file. This happens if one write through provider is configured with write behind enabled.

741006 FIX: In a two or three node partitioned replica cluster, if a node goes down and immediately comes back before the state transfer is completed, items are lost.

741007 FIX: If the indexed items are also associated with tags, the LINQ query without any where clause may return an exception that the key is already added in the dictionary. This was happening because of duplicate keys were added in the result.

741008 FIX: Cannot increase the cache size at runtime from NCache Manager.

741009 FIX: Cache server sends multiple status inquiry requests to the other cache server if it does not receive a response in a certain time for a given request. In case of network failures or cache node unresponsiveness the request queue becomes full and timeout errors are thrown to the user. This status inquiry mechanism is now disabled by default and can be turned on through NCache service config file.

741010 FIX: If there are two or more caches running on the same machines and both are using TAG feature then you may get object reference not set errors in the cache server log files. This may also slow down the cache response in some situations. This has been fixed.

741011 FIX: If the response size is larger than 1.9 GB the cache will hang and clients will timeout. This happens because of the .NET serialization limitation. This happens usually with bulk operations like Queries, Tags, Groups, and bulk operations.

Release Notes NCache 3.8 (Service Pack 4)

Thursday, Mar 17, 2011

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Introduction

NCache 3.8 Service Pack 4 (SP4) contains important fixes which are important for production environments. It is a recommended upgrade for all NCache 3.8 users.

Enhancements and New Additions

Following are some enhancements made in this release.

4. **String sharing between Java and .NET (vice versa)**
You can share string values between .NET and Java applications.
5. **SQL Cache Dependency Custom Queue/Notification Service**
SQL Cache dependency architecture has been enhanced to support custom queues and notification services that does not require extra user permissions like "create queue" and "create service". NCache now allows you to choose either default mode (with default SQL notification and queue service) or custom mode where you can specify your own queue and notification service.

The service name format should be "NCacheSQLService-[ip-address]" and "NCacheSQLQueue-[ip-address]" where the IP-Address will be of machine on which NCache service process will be running. You can specify this setting in service configuration file "NCache/bin/service/Alachisoft.NCache.Service.exe.config".

```
<add key="NCacheServer.NCacheSQLNotificationService"
value="NCacheSQLService"/>
```

List of Bugs Fixed:

738401 FIX: Enumeration returns byte array if the item was added through cache loader.

738402 FIX: ViewState module throws Null Reference Exception if the traces are disabled and module tries to write something in log.

738403 FIX: Command line activation throws invalid license key.

738404 FIX: Cache becomes unresponsive or timeouts when the number of items exceed 7 million.

738405 FIX: Query Sample in x64 has some compilation errors.

738406 FIX: NCache Session State Management assembly was missing in 64-bit developer installation.

738407 FIX: Connection Balancing and failover in Partitioned and Partitioned Replica topologies does not work if dual NICs are used where one NIC is bound to client-server communication and the second NIC is bound to cache-server (cluster) communication.

738408 FIX: A 32 bit security assembly "Alachisoft.NCache.security.dll" is missing in windows GAC in NCache 64 bit setup. This does not allow 32-bit applications to run on 64 bit caching server.

738409 FIX: CacheProvider 4.0 - GetValues() method returns all key-values including those which are also not available in cache. As per Microsoft documentation it should return only the key/values that exist in cache.

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[738410](#) FIX: CacheProvider 4.0 - NSQLChangeMonitor and NOraChangeMonitor are Enterprise Edition features and are unintentionally exposed in NCache Professional Edition.

Release Notes NCache 3.8 (Service Pack 3)

Tuesday, Nov 02, 2010

Introduction

In this release of NCache 3.8 Service Pack 3 (SP3), NCache Enterprise Edition is separated into two products named as 'NCache for .NET' and 'NCache for Java'. Previously 'NCache' had both components combined into a single package.

Two new features are also added in 'NCache Java Client'.

Enhancements and New Additions

Following features are added in 'NCache Java Client' in this release.

1. Database Dependency

Now you can add items in cache with 'database dependency' from your java application. Any change in related database invalidates the cache entry, and your application will receive the notifications about this change.

2. Streaming API

NCache Java Client has added streaming support in the API where you can read and write binary data stream in the cache.

List of Bugs Fixed:

[738301](#) FIX: On adding new node in cluster, new node info was not added in "client.nconf" file on all cluster nodes.

APPLIES TO:

- NCache Enterprise Edition 3.8.x

Release Notes NCache 3.8 (Service Pack 2)

Monday, Oct 10, 2010

Introduction

NCache 3.8 Service Pack 2 (SP2) contains important fixes and enhancements that have been reported by customers. It is a recommended upgrade for all users of NCache 3.8.

Enhancements and New Additions

Following features are added in this release.

3. License Support for Xen VM

NCache now support licensing on Xen VM environments.

4. Visual Studio 2010 Assembly Reference solution

Visual Studio 2010 shows a warning message when you add reference to NCache assemblies and then the build also fails. This only happens if the application target frame work is .NET 3.5. This is a known issue of Visual Studio that it gets confused when you have the same assemblies available in the GAC 2.0 and GAC 4.0 and for dependent assemblies it tries to load them from GAC 4.0 which results in the warning message.

We have resolved this issue by copying all the assemblies in the NCache bin/assembly folder and now Visual Studio does not have to locate the dependent assemblies in GAC. This has resolved the issue.

List of Bugs Fixed:

[738211](#) FIX: ViewState Caching does not work with AJAX controls especially GridViewPager.

[738210](#) FIX: Session Store Provider throws an exception "The SessionStateStoreData returned by ISessionStateStore has a null value for items" if the session is empty.

[738209](#) FIX: ViewState assemblies were build with wrong version in NCache Enterprise Developers installation.

[738208](#) FIX: There was a performance issue in the feature object query. The search result was slower when you have a large set of items in the cache.

[738207](#) FIX: NHibernate sample has a build issue in NCache Professional Edition.

[738206](#) FIX: NCache Manager throws an object reference not set error if you enable the security without specifying users.

[738205](#) FIX: NCache Manager throws an object reference not set error if you change the bind to IP (using the option "Select Network Interface Card") for local cache server. This option is now removed from local cache server.

738204 FIX: NCache Manager fails to load ReadThru/WriteThru Provider if the provider is an exe file. When you deploy the ReadThru/WriteThru provider using the "Deploy Provider" button, NCache Manager rename the file extension to .dll

738203 FIX: NCache Professional does not allow remote client connections. This happens if the remote client is installed with NCache Professional Remote Client installation.

738202 FIX: NCache integration with Microsoft Enterprise Library v4.1 returns Boolean value for indexer method `Cache["Key"]` instead of the actual object.

738201 FIX: Multiple bugs are fixed in JavaScript and CSS Minification. The JavaScript Minification fails if the rendered output contains .axd files in the JavaScript tag, and if the `<script>` tag ends with `</Script>`. Similarly, the CSS minification fails if relative paths are used for loading images. Now the relative paths in CSS are converted to absolute path.

APPLIES TO:

- NCache Enterprise Edition 3.8.x
- NCache Professional Edition 3.8.x

Release Notes NCache 3.8 (Service Pack 1)

Tuesday, August 24, 2010

Introduction

NCache 3.8 Service Pack 1 (SP1) contains important fixes and enhancements. The most important and demanded feature added in this release is the support of .Net frame work 4.0

The API is completely compatible with the 3.8 release version and applications can upgrade without re-building/re-compiling the application.

Enhancements and New Additions

Following features are added to this service pack 1.

1. .Net 4.0 support available.

The code base of NCache cache server has been converted to .NET 4.0 and the NCache client is available in both .NET 2.0 and 4.0 versions.

2. Improvement in client cache management

There is an improvement in client cache management through NCache Manager where project files will contact to client nodes on refresh option and this has improved fast loading of Ncache Manger project file.

3. Samples are now builded with Visual studio 2008.

Ncache samples are now builded with visual studio 2008.

4. VeriSign issue.

VeriSign issue, default in service configuration file should be generatePublisherEvidence enabled = "false"/>. The enhancement is made.

5. ReadThru Interface improved

ReadThru provider interface signature has been modified to support maximum features of NCache. There is new structure introduced under the namespace "Alachisoft.NCache.Runtime.Caching" called `ProviderCacheItem` which is similarly to the `CacheItem`. You can now easily specify expirations, tags, eviction hints, dependencies etc.

New interfaces

```
public void LoadFromSource(string key, out ProviderCacheItem cacheItem)
public Dictionary<string, ProviderCacheItem> LoadFromSource(string[] keys)
```

6. CacheLoader Supports IsResyncExpiredItem

Now, you can specify `IsResyncExpiredItem` property in Cache Loader so that the expired items can be reloaded automatically.

7. NHibernate Integration

NCache is not supporting the latest version of NHibernate 2.1.2. We have also added region support in this release. NHibernate sample application is also modified with NHibernate regions support.

List of Bugs Fixed:

[738108](#) FIX: AutoStart fails to start the cache if the cache is under heavy load. Now the AutoStart starts the cache in Asynchronous mode.

[738107](#) FIX ViewState assemblies were built with wrong version in NCache Enterprise Developers installation.

[738106](#) FIX: CAB Integration does not work in NCache professional Developers installation because of aggregate dependency.

[738105](#) FIX: Create Cache tool bug fix.

[738104](#) FIX: NHibernate integration requires complete DateTime format for absolute expiration which is wrong in. Now, you can specify absolute expiration in terms of seconds.

[738105](#) FIX: There was a serialization bug in Session Store Provider which occurs in rare scenarios only.

[738103](#) FIX: SQL Dependency bug fix in NHibernate where client was unable to use queries with composite key.

[738102](#) FIX: Client cache does not work with NHibernate Integration.

[738101](#) FIX: GetByTag performance is slow for large number of items.

[736230](#) FIX: Object query returns empty result if the item was automatically reloaded (`IsResyncExpiredItem` is true) through the ReadThru provider.

APPLIES TO:

- NCache Enterprise Edition 3.8
- NCache Professional Edition 3.8

Release Notes NCache 3.8

Monday, June 7, 2010

Introduction

NCache 3.8 contains new important Additions and enhancements based on the customer's feedback. The API backward compatibility is the most important concern for most of the customers and keeping this in mind we have added a new protocol for API compatibility. From now (3.8) onwards all the new releases will be automatically compatible with older versions of NCache (starting from 3.8).

Enhancements and New Additions

Following features are added in this release.

1. LINQ Support in NCache

NCache provides LINQ integration with the help of **IQueryable** interface which allows the cached items to be searchable. NCache support both Lambda Expressions and LINQ operators for querying cached items.

2. Entity Framework (EF) Caching

NCache provides seamless integration with EF caching where it gets plugged-in at the ADO level and lets your application use distributed caching without any code change. You only need make changes in the application configuration file.

3. .NET Cache Provider 4.0

NCache provides integration with .NET cache provider 4.0. NCache also provides different **Change Monitors (file based, key based, database dependency)** for managing cache dependencies.

4. Backward Compatibility Client API/Support

NCache now follows backward compatibility protocol and in future version application will be able to connect to newer versions without upgrading the clients.

5. Streaming API

NCache has added streaming support in the API where you can read and write binary data stream in the cache.

6. Java/CSS minification

NCache combines multiple JavaScript files and CSS files into a single resource file and store it in the cache. It also replaces the rendered output with single HTTP reference for all CSS and JS files so that browser can make a single call for loading all the resources. This helps improve your application response time.

7. ViewState Caching

NCache replaces the long ViewState string into a smaller one and sends it to the client. This helps improve the application performance and save bandwidth.

8. New NCache Monitoring Tool

9. NCache Email Alert System

You can now receive alert through emails on certain cache events like "State Transfer", Cache Stopped, Member Left, Member Joined etc.,

10. Cache Meta information API

This API allows Meta information about cache items like LastAccessed Time and Creation DateTime.

11. Multi-ReadThru/Write Thru support

NCache allows multiple readthru and writethru providers. NCache Manager automatically deploys the data source assemblies into the deployed folder so you don't have to manually copy the provider assemblies in NCache service folder.

12. Partitioned Replica Synchronous replication

Partitioned Replica Topology now supports Synchronous replication

13. Security Configuration command line tool

You can now configure security through command line tool

14. Cache Config Upgrade tool

If you have an old cache config.nconf file then you can upgrade it by using this tool.

15. Locking support with GetCacheItem

16. Remote Client Management from NCache Manager

Now you can configure Remote Clients from NCache Manager and can easily change individual client settings all from a single point.

17. Client-Cache Management from NCache Manager

Client Cache can also be managed from NCache Manager.

18. Client/Client Cache management command line tools

You can also add remote clients and client-cache through command line tools.

19. New interface for ReadThru/WriteThru providers.

Now you can specify your cache provider assemblies through a new wizard where you can pick your assembly. Now, you don't have to type assembly information manually.

20. Automatic deployment of ReadThru/WriteThru providers

NCache Manager provides the automatic deployment of data source providers.

21. Dynamic Compact Serialization Support (no code change required)

Now you don't need to implement any ISerializable or IDeserializable Interfaces for compact serialization. You only need to register the compact types in NCache Manager and NCache automatically serialize the types at runtime.

22. Security Enhancement (Security Management from NCache Manager)

Security can be configured from NCache Manager now.

Release Notes NCache 3.6.2 (Service Pack 3)

Thursday, April 21, 2010

Introduction

NCache 3.6.2 Service Pack 3 (SP3) contains important fixes and enhancements that have been reported by customers. The most important and demanded feature added in this release is the support of Java session caching for J2EE platforms. Now, you can easily use NCache as a session store for your Java applications without making any code change. You only need to add a Java session filter in your web.xml file.

Those using NCache 3.6.x version can upgrade without re-building/re-compiling the application.

Enhancements and New Additions

Following features are added to this service pack 3.

1. Java Session Support for WebLogic (no-code change required)

NCache Java Session Provider is supported for WebLogic and can be used on any platform of J2EE (web servers), if underlying platform (web server) follows the Java Servlet 2.3 (or later) specification. Java Sessions are supported on both Linux and Windows platforms.

2. Java Session Support for JBoss (no-code change required)

NCache Java Session Provider is supported for JBoss on both Linux and Windows platforms.

3. Java Session Support for WebSphere (no-code change required)

NCache Java Session Provider is supported for WebSphere on both Linux and Windows platforms.

4. Java Session Support for ApacheTomcat (no-code change required)

NCache Java Session Provider is supported for Apache-Tomcat on both Linux and Windows platforms.

5. NCache support for Server GC

There are two flavors of Garbage Collector based on server operating system and workstation called "Server GC" and "Workstation" respectively. Unless it is specified .NET framework uses workstation GC by default even it is running under server operating system. Now, NCache allows you to specify GC mode depending on your operating system.

Server GC is designed for maximum throughput, and scales with very high performance. NCache is now by default configured to use Server GC instead of Workstation GC. You can change this mode from Alachisoft.NCache.Service.exe.config

```
<add key="NCacheServer.EnableForcedGC" value="true"/>
<add key="NCacheServer.ForcedGCThreshold" value="80"/>
```

List of Bugs Fixed:

736228 FIX: NCache installation fails on Windows 7 because of new security model in Windows 7. This has been fixed now.

[736227](#) FIX: There was a bug in Client Queue Counter which becomes negative at some particular stage. This bug has been fixed.

[736226](#) FIX: There was a bug in item expiration in Java API which has been fixed now.

APPLIES TO:

- NCache Enterprise Edition 3.6.x

Release Notes NCache 3.6.2 (Service Pack 2)

Monday, Jan 11, 2010

Introduction

NCache 3.6.2 Service Pack 2 (SP2) contains important fixes and enhancements that have been reported by customers. It is a recommended upgrade for all users of NCache. Those using NCache 3.6.x version can upgrade without re-building/re-compiling the application.

Enhancements and New Additions

Following features are added to this service pack.

1. Logging of Important events into event viewer

An event will be logged in windows event viewer and cache-error log when

- you stop or start a cache
- cache fails to start
- cache node joins/leaves a cluster
- state transfer start or stop.
- client connect or disconnect a cache
- cache memory crosses a certain threshold specified in service config file.
- you are on last 10 days of NCache evaluation and a log warning event will be logged per day until you extend the evaluation or activate NCache with a license key.

These events are categorized as information, warning and information.

```
<add key="NCacheServer.EventLogLevel" value="error | warning| all"/>
```

User can specify only one of the following levels:

error: Only the error events will be logged

warning: Both error and warning events will be logged.

all: This level allows events of all categories to be logged. This is the default level.

Client Connection Log entry for event viewer/log-file can be enabled from NCache Service configuration file. By default this option is disabled but you can enable it by modifying the following attribute in NCache service config file "Alachisoft.NCache.Service.exe.config".

```
<add key="NCacheServer.LogClientEvents" value="false" />
```

NOTE: The above change requires NCache service to restart.

2. Oracle 11g is supported

NCache now supports Oracle 11g for database dependency and synchronization feature.

List of Bugs Fixed:

[736225](#) FIX: Some of NCache clients stop responding when the cache cluster is under stress and you add a new caching server or the cache servers are using shared network card on VM.

[736224](#) FIX: NCache service (Alachisoft.NCache.Service.exe) and NCache Manager stop responding when the cache is under stress and you add a new caching server or the cache servers are using shared network card on VM.

[736223](#) FIX: NCache service stops responding due to Hashmap corruption. This is similar to the above mentioned service hanging scenario, however in this scenario, service hangs for indefinite time.

[736222](#) FIX: Cache stops expiring items from the cache if a WMI call does not respond for a long period of time because of WMI unresponsive state.

[736221](#) FIX: Client unbalancing in Partitioned and Partitioned Replica on node joining is fixed now. This only happens in very rare situations.

[736220](#) FIX: Clients were not able to get real performance benefits of client-optimization feature of Partitioned Replica if the clients are 32-bit and cache is 64bit or vice versa.

[736219](#) FIX: Cache state transfer (starts when a cache node joins the cluster) does not transfer those items which have multi-level key dependent items.

[736218](#) FIX: Java client environmental issues have been fixed. Now you can pass client.nconf file path from API. Java client now supports both Windows and Linux environment.

[736217](#) FIX: Java sample application bugs are fixed now

[736216](#) FIX: NCache service does not start if the socket call fails to bind itself network card. NCache now tries to establish the connection without binding.

[736215](#) FIX: When you unplug the network cable Client hanging issue when cable is unplugged during stress is fixed now. This normally happened in replicated topology and the client operations were hanged for sometime.

[736214](#) FIX: NCache tag query throws "Null Reference" in partitioned and partitioned replica topologies when used with LIKE operator and the tag does not exist.

[736213](#) FIX: NCache throws "Data group mismatch" exception when you update and item by calling INSERT method with locking and group parameters.

APPLIES TO:

- NCache Enterprise Edition 3.6.x
- NCache Professional Edition 3.6.x

Release Notes NCache 3.6.2 (Service Pack 1)

Tuesday, Oct 06, 2009

Introduction

NCache 3.6.2 Service Pack 1 (SP1) contains important fixes and enhancements that have been reported by customers. It is a recommended upgrade for all users of NCache. Those using NCache 3.6.x version can upgrade without re-building/re-compiling the application.

Enhancements and New Additions

Following features are added to this service pack.

1. Cluster Rejoining feature

To overcome socket breaking issues within cluster nodes, NCache has a new connection retry logic which is configurable in config.nconf in cluster configuration.

```
connection-retries="10" connection-retry-interval="1secs"
```

In case a socket breaks due to Network problems, NCache will try to re-establish the connection after every connection-retry-interval as many times as connection-retries. [This requires a restart of NCache service after update.](#)

2. Addition of NCache Client side counters

NCache client side counters are introduced to detect and debug client side issues. These counters appear in Windows perfmon counters in category 'NCache Client'.

3. Asynchronous startup of caches in Autostart

NCache autostart feature is enhanced and starting up of various user specified caches with NCache service start up, is made asynchronous. If some caches are corrupt and are not started, a warning is logged but NCache service starts up normally.

4. Client-cache-sync mode description

Client cache sync mode description is added in NCache Help.

5. Memory estimation and warning mechanism in cluster configuration

Description about setting up cluster memory, its usage and estimation is added in cluster configurations.

6. NCache Installation in Admin mode

NCache installation wizard warns the user who is not an admin. Administrative privileges and permissions are required for the user to install NCache on a system.

List of Bugs Fixed:

736212 FIX: Items with same Tags if added and removed frequently resulted in corrupting the tag. Items exist in the cache but not gettable with their tag.

736210 FIX: The memory leakage related with LOH results in high memory consumption in case of large objects (more than 80KB) which are not garbage collected.

736209 FIX: NCache generates extra log entries in NCache log files which result in huge log files. These extra logs are removed.

APPLIES TO:

- NCache Enterprise Edition 3.6.x
- NCache Professional Edition 3.6.x

Release Notes NCache 3.6.2

Thursday, July 09, 2009

Introduction

NCache 3.6.2 contains a number of useful enhancements and bug fixes that have been reported by customers. It is a recommended upgrade for all users of NCache. Those using NCache 3.6.x version can upgrade without re-building/re-compiling the application.

Enhancements and New Additions

Following features are added to this version.

1. Log Traces

Log traces are added for the following events

1. When a node successfully joins a node in the cluster.
2. When a node can not join a node in the cluster.
3. When a node leaves the cluster.

2. Polling based database dependency improvements

Polling based database dependency has the following improvements.

4. User can specify the 'db-cache-key' other than the 'cache-key' to add to the ncache_db_sync table.
5. Resync-expired-items option is now available for this dependency.

3. Client.nconf can be opened in notepad

4. Improved Error messages

Error messages are improved when service fails to start because of unavailable bind-to-ip addresses.

List of Bugs Fixed:

[736208](#) FIX: Expiration problem that arises in around 20-30 days of using NCache results in items occupying memory leading to high memory usage.

[736207](#) FIX: Client.nconf is rewritten by NCache service restart and old changes are lost.

[736206](#) FIX: Groups and tags information is not preserved if the items are read-thru from a datasource. Items are loaded in the cache but do not have the tag or group already specified.

[736205](#) FIX: IIS worker process high CPU consumption bug is fixed

APPLIES TO:

- NCache Enterprise Edition 3.6.x
- NCache Professional Edition 3.6.x

Release Notes NCache 3.6.1

Thursday, March 26, 2009

Introduction

NCache 3.6.1 contains a number of useful enhancements and bug fixes that have been reported by customers. It is a recommended upgrade for all users of NCache. Those using NCache 3.6.x version can upgrade without re-building/re-compiling the application.

Enhancements and New Additions

Following features are added to this version.

1. NCache client rebalancing among cache server nodes

Now the NCache client connections are automatically rebalanced among the cluster nodes when a new node joins the cache. So now you do not have to worry any more about client load balancing on cache servers.

2. New Counters for performance monitoring

New counters for performance monitoring are added in the 'NCache' category in Windows Perfmon counters.

3. Improvements in DB dependency

NCache now supports the use of Stored-Procedures and Command Object in DB Dependency.

List of Bugs Fixed:

[736204](#) FIX: NCache service constantly consumes CPU if there is one item left in the cache with the SQL Yukon dependency and the dependency is triggered.

[736203](#) FIX: AVG counters show incorrect values for Average Add/sec, Update/sec and Remove/sec.

[736202](#) FIX: Memory leakage and performance issue related with Least Recently Used and Least Frequently Used eviction policies (LRU/LFU).

[736201](#) FIX: Bind to IP Dialog corrupts the display if there are more than 2 network cards on a system.

[736200](#) FIX: NCache Service consumes CPU at some fixed interval even when there is no activity on the cache after a load test is stopped after running for hours.

APPLIES TO:

- NCache Enterprise Edition 3.6.x
- NCache Professional Edition 3.6.x