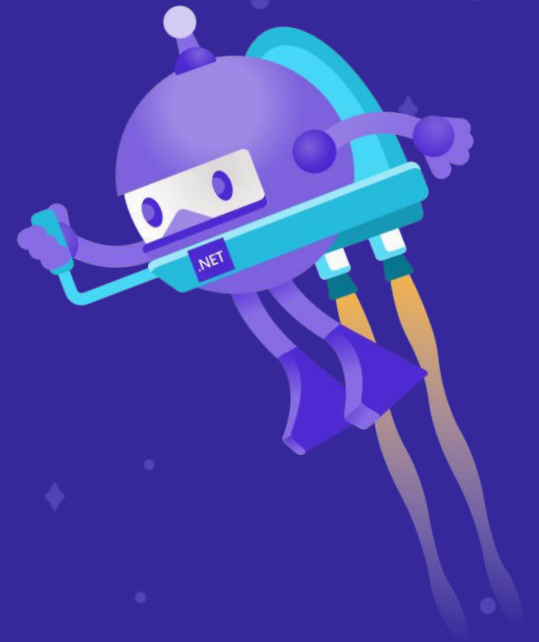# .NET Conf 2022 x Seoul

풀 스택과 사랑에 빠질 준비, 되셨나요?

.NET 6 전환기

문성원 at Planeatrium

@longfin
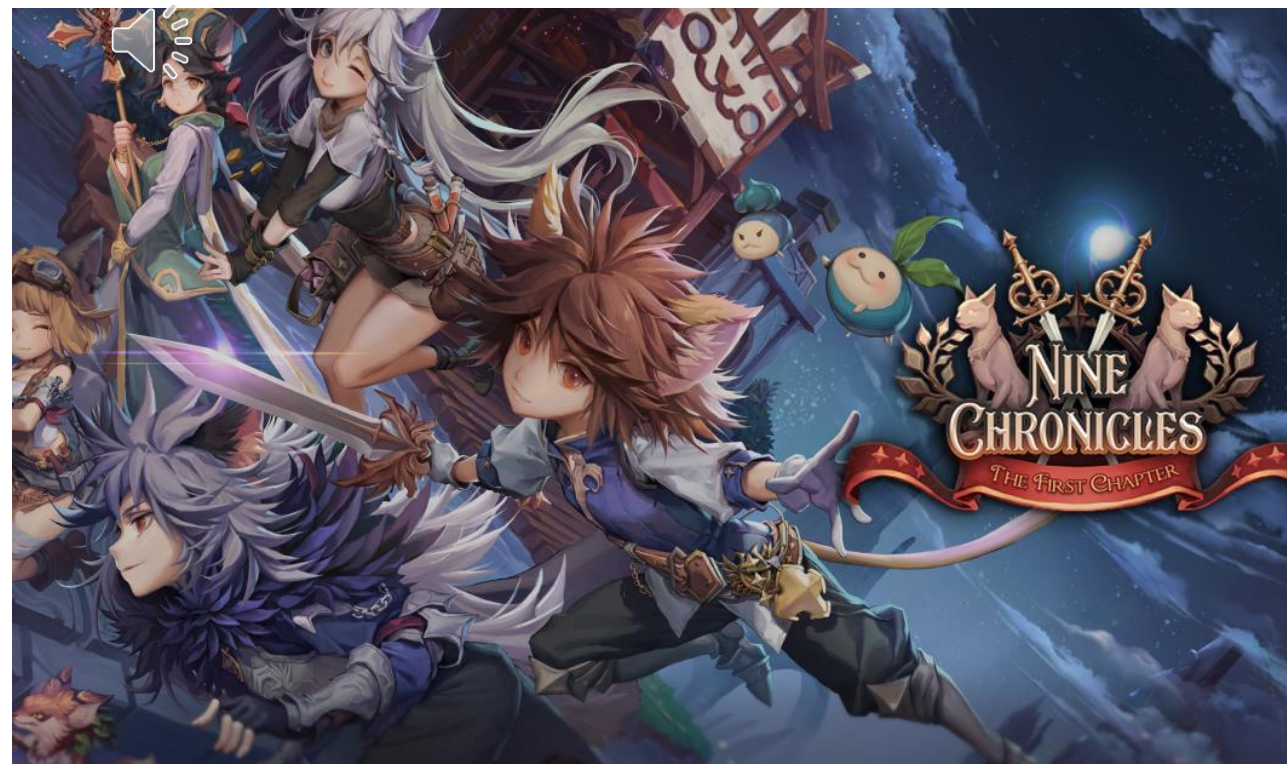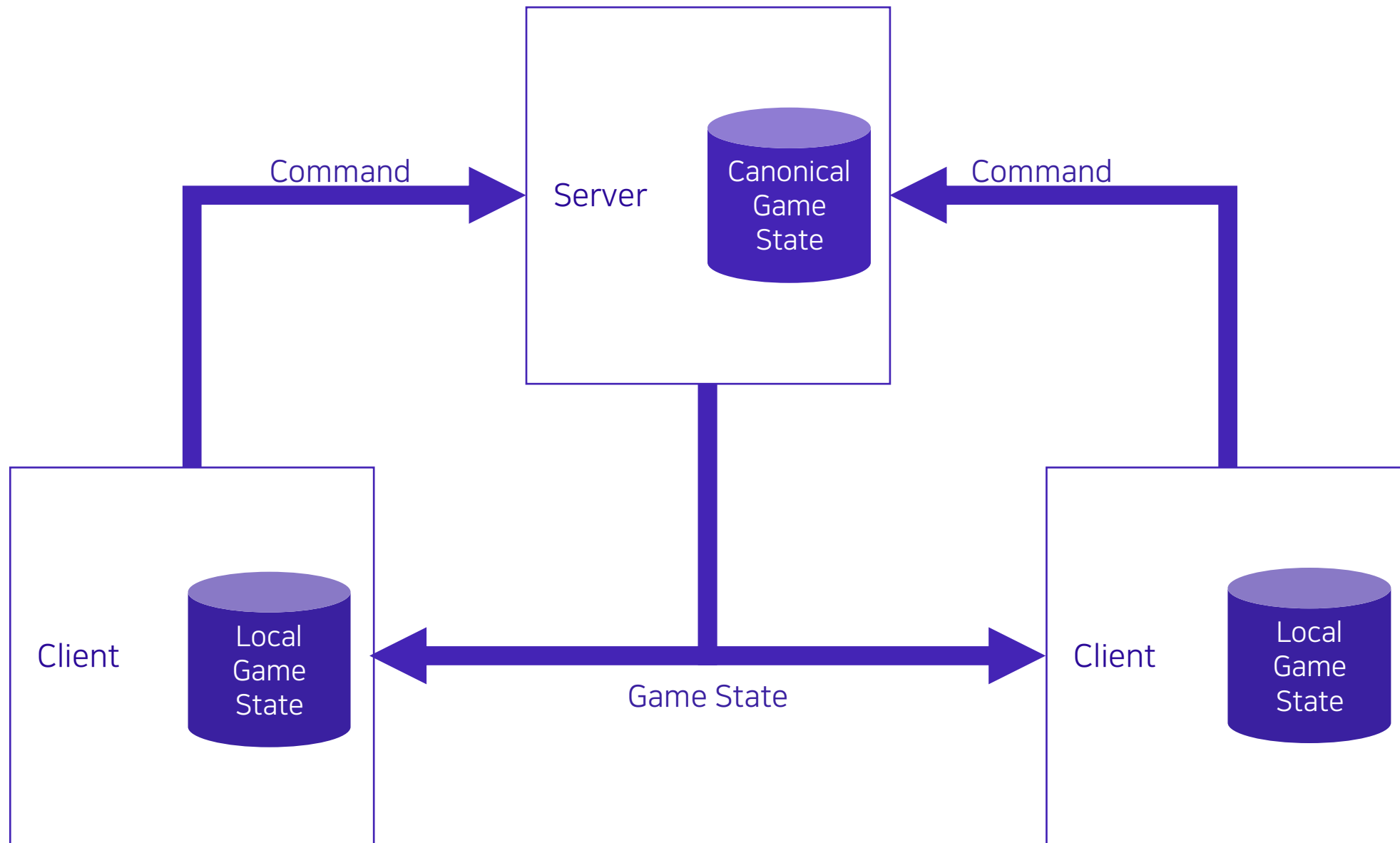
오늘 이야기 할 것들

- 나인 크로니클
- .NET 6
- 옮겨봅시다

나인 크로니클

.NET 6

Patches for 3 years

LTS

.NET Core 3.1
Dec 2019

.NET 5
Nov 2020

.NET 6
Nov 2021

.NET 7
Nov 2022

.NET 8
Nov 2023

Current

Patches for 18 months
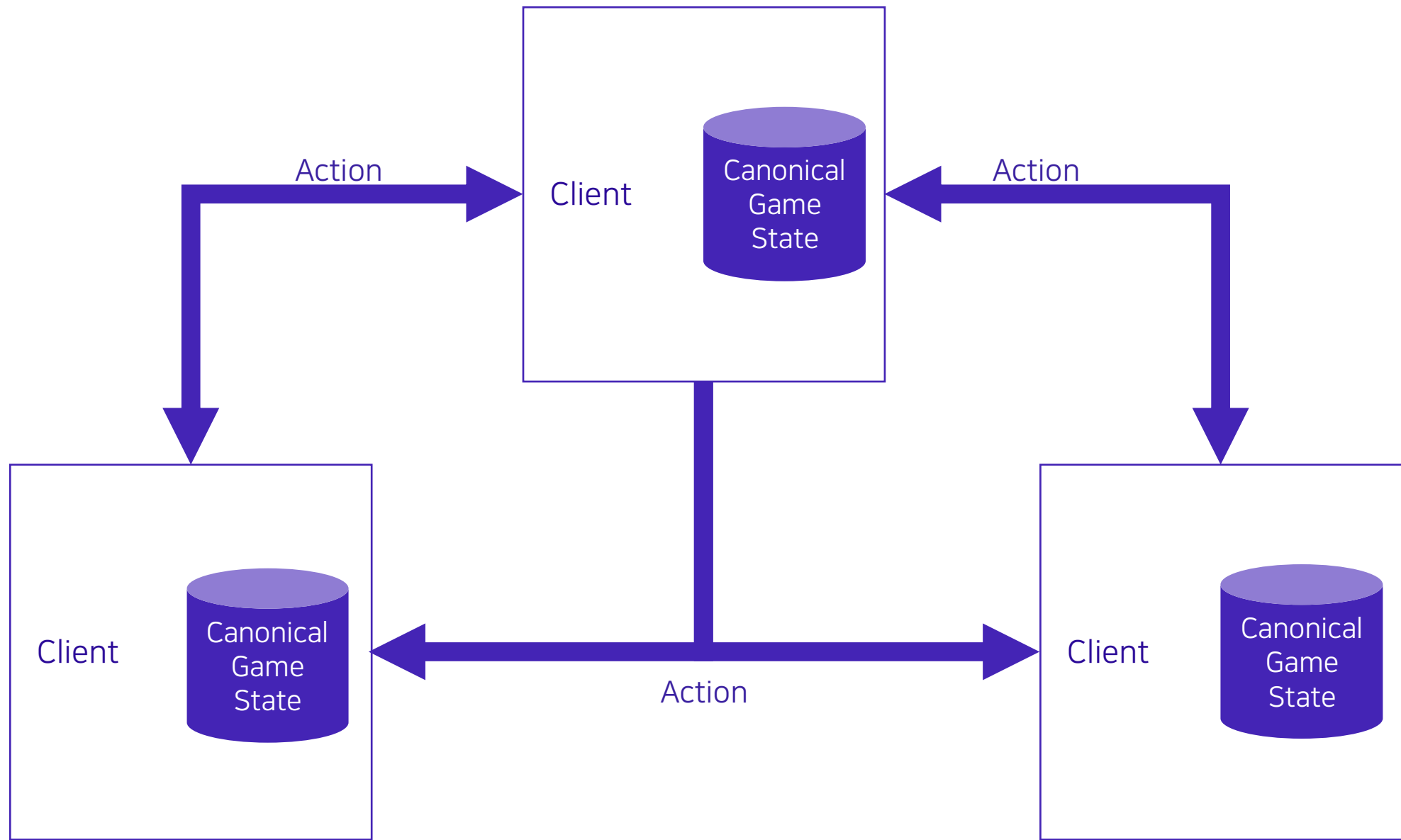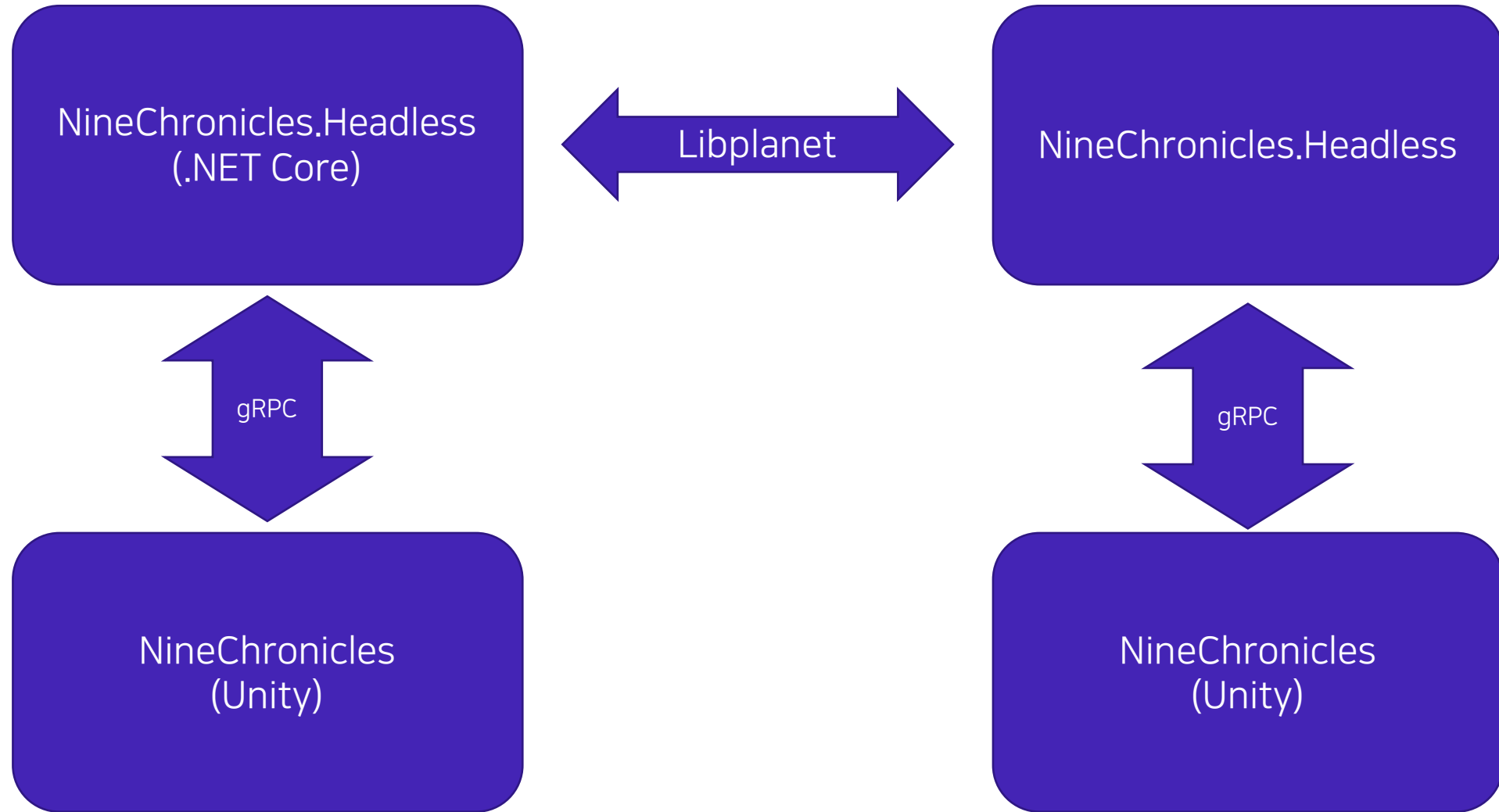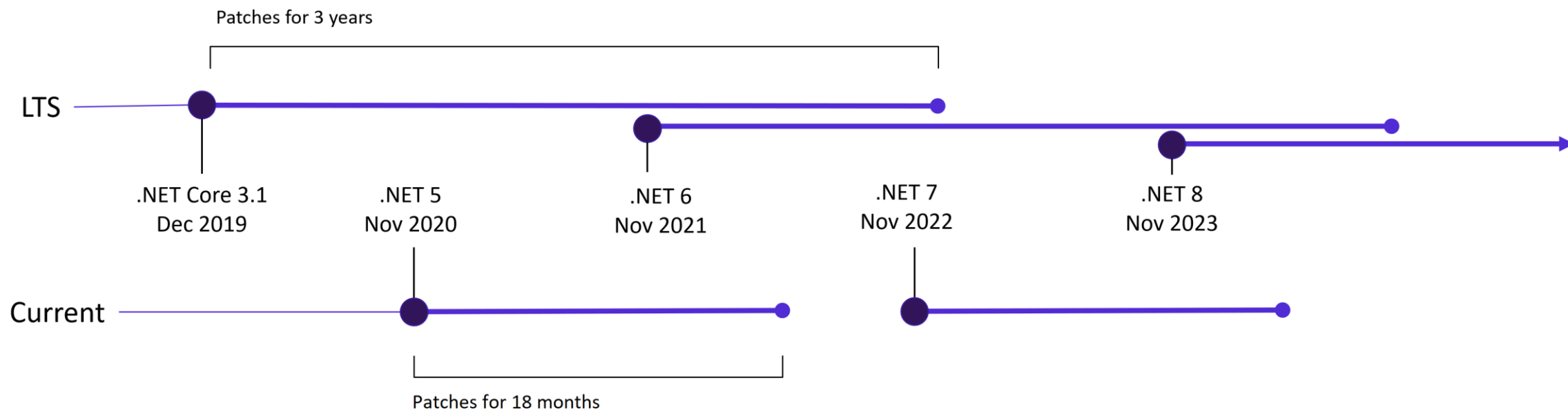
.NET 6에 기대한 것들

- 새 API들
- 향상된 성능
- Arm64(특히 Apple Silicon) 지원
- C# 10

Parallel.ForEachAsync()

```csharp
var urlsToDownload = new []
{
    "https://dotnet.microsoft.com",
    "https://www.microsoft.com",};

var client = new HttpClient();

await Parallel.ForEachAsync(urlsToDownload, async (url, token) =>
{
    var targetPath = Path.Combine(Path.GetTempPath(), "http_cache", url);

    HttpResponseMessage response = await client.GetAsync(url);

    if (response.IsSuccessStatusCode)
    {
        using FileStream target = File.OpenWrite(targetPath);
        await response.Content.CopyToAsync(target);
    }
});
```

MaxBy() & MinBy()

```csharp
var people = GetPeople();

var oldest = people.MaxBy(p => p.Age);
var youngest = people.MinBy(p => p.Age);

Console.WriteLine($"The oldest person is {oldest.Age}");
Console.WriteLine($"The youngest person is {youngest.Age}");

public record Person(string Name, int Age);
```

Task.WaitAsync() with timeout

```csharp
// NET Core 3.1
Task t = ...;
using (var cts = new CancellationTokenSource())
{
    if (await Task.WhenAny(Task.Delay(timeout, cts.Token), t) != t)
    {
        throw new TimeoutException();
    }

    cts.Cancel();
    await t;
}


// NET 6
Task t = ...;
await t.WaitAsync(timeout);
```

```csharp
private SemaphoreSlim _sem = new SemaphoreSlim(0, 1);

private CancellationTokenSource _cts = new CancellationTokenSource();


[Benchmark]

public Task WithCancellationToken()

{

    Task t = _sem.WaitAsync(_cts.Token);

    _sem.Release();

    return t;

}


[Benchmark]

public Task WithTimeout()

{

    Task t = _sem.WaitAsync(TimeSpan.FromMinutes(1));

    _sem.Release();

    return t;

}


[Benchmark]

public Task WithCancellationTokenAndTimeout()

{

    Task t = _sem.WaitAsync(TimeSpan.FromMinutes(1), _cts.Token);

    _sem.Release();

    return t;

}
```

Method	Runtime	Mean	Ratio	Allocated
WithCancellationToken	.NET Core 3.1	1.327 us	1.00	536 B
WithCancellationToken	.NET 6.0	1.056 us	0.80	448 B
WithTimeout	.NET Core 3.1	1.768 us	1.00	1,064 B
WithTimeout	.NET 6.0	1.086 us	0.61	544 B
WithCancellationTokenAndTimeout	.NET Core 3.1	1.901 us	1.00	1,080 B
WithCancellationTokenAndTimeout	.NET 6.0	1.186 us	0.62	544 B

```csharp
private int? _nullableValue = 1;


[Benchmark]
public string Format() => Format(_nullableValue);


private string Format(T value, IFormatProvider provider = null)
{
    if (value is IFormattable)
    {
        return ((IFormattable)value).ToString(null, provider);
    }

    return value.ToString();
}
private List<string> _strings = new List<string>() { "Hi", "How", "are", "you", "today" };


[Benchmark]
public string Join() => string.Join(", ", _strings);
```

Method	Runtime	Mean	Ratio	Allocated
Format	.NET 5.0	87.71 ns	1.00	48 B
Format	.NET 6.0	51.88 us	0.59	24 B
Join	.NET 5.0	123.54 ns	1.00	112 B
Join	.NET 6.0	51.08 ns	0.41	72 B

```csharp
private string _guid = Guid.NewGuid().ToString();


[Benchmark]

public Guid Parse() => Guid.Parse(_guid);



private Version _version = new Version(6, 1, 21412, 16);


[Benchmark]

public string VersionToString() => _version.ToString();
```

Method	Runtime	Mean	Ratio
Parse	.NET Core 3.1	100.78 ns	1.00
Parse	.NET 6.0	33.84 ns	0.33
VersionToString	.NET Core 3.1	107.35 ns	1.00
VersionToString	.NET 6.0	44.83 ns	0.42

record (C# 9)

```csharp
public record Person(string FirstName, string LastName);

public static void Main()
{
    Person person = new("Nancy", "Davolio");
    Console.WriteLine(person);
    // output: Person { FirstName = Nancy, LastName = Davolio }
}
```

record (C# 9)

```csharp
public record Person(string FirstName, string LastName, string[] PhoneNumbers);

public static void Main()
{
    var phoneNumbers = new string[2];
    Person person1 = new("Nancy", "Davolio", phoneNumbers);
    Person person2 = new("Nancy", "Davolio", phoneNumbers);
    Console.WriteLine(person1 == person2); // output: True

    person1.PhoneNumbers[0] = "555-1234";
    Console.WriteLine(person1 == person2); // output: True

    Console.WriteLine(ReferenceEquals(person1, person2)); // output: False
}
```

record + with (C# 9)

```csharp
public record Person(string FirstName, string LastName);

public static void Main()
{
    Person person1 = new("Nancy", "Davolio");
    Console.WriteLine(person1);
    // output: Person { FirstName = Nancy, LastName = Davolio }

    Person person2 = person1 with { FirstName = "John" };
    Console.WriteLine(person2);
    // output: Person { FirstName = John, LastName = Davolio }
    Console.WriteLine(person1 == person2); // output: False
}
```

record struct (C# 10)

```csharp
public readonly record struct Point(double X, double Y, double Z);
```

const interpolation (C# 10)

```csharp
const string Language = "C#";
const string Platform = ".NET";
const string Version = "10.0";
const string FullProductName = $"{Platform} - Language: {Language} Version: {Version}";
```

파일 범위 이름 공간 (C# 10)

```csharp
using System;

namespace SampleFileScopedNamespace;

class SampleClass { }

interface ISampleInterface { }

struct SampleStruct { }

enum SampleEnum { a, b }

delegate void SampleDelegate(int i);
```

옮겨봅시다

NineChronicles.Headless
(.netcoreapp3.1 → .net6)

9c
(Unity)

Libplanet
(.netstandard2.0)

Lib9c
(.netstandard2.0)

NineChronicles.RPC.Shared
(.netstandard2.0)

https://github.com/planetarium/NineChronicles.Headless/pull/859

설치 확인

```
$ dotnet --list-sdks
3.1.120 [/usr/share/dotnet/sdk]
6.0.100 [/usr/share/dotnet/sdk]
```

https://dotnet.microsoft.com/en-us/download/dotnet/6.0

NineChronicles.Headless > NineChronicles.Headless.csproj

```
1    <Project Sdk="Microsoft.NET.Sdk">
2      <PropertyGroup>
3        <TargetFramework>net6</TargetFramework>
4        <LangVersion>10.0</LangVersion>
5        <TreatWarningsAsErrors>true</TreatWarningsAsErrors>
6        <CodeAnalysisRuleSet>..\NineChronicles.Headless.Common.ruleset</CodeA
7        <Nullable>enable</Nullable>
8      </PropertyGroup>
9      <ItemGroup>
```

```
[longfin@longfin-desktop-arch NineChronicles.Headless]$ dotnet restore
  Determining projects to restore...
/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Executable/NineChronicles.Headless.Executable.csproj : error
NU1201: Project NineChronicles.Headless is not compatible with netcoreapp3.1 (.NETCoreApp,Version=v3.1). Project NineChronicles.Headles
s supports: net6.0 (.NETCoreApp,Version=v6.0) [/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Executable.sln
]
/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Executable.Tests/NineChronicles.Headless.Executable.Tests.csp
roj : error NU1201: Project NineChronicles.Headless is not compatible with netcoreapp3.1 (.NETCoreApp,Version=v3.1). Project NineChroni
cles.Headless supports: net6.0 (.NETCoreApp,Version=v6.0) [/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Ex
ecutable.sln]
  Failed to restore /home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Executable/NineChronicles.Headless.Execut
able.csproj (in 1.6 sec).
  Failed to restore /home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Executable.Tests/NineChronicles.Headless.
Executable.Tests.csproj (in 1.61 sec).
/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Tests/NineChronicles.Headless.Tests.csproj : error NU1201: Pr
oject NineChronicles.Headless is not compatible with netcoreapp3.1 (.NETCoreApp,Version=v3.1). Project NineChronicles.Headless supports
: net6.0 (.NETCoreApp,Version=v6.0) [/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Executable.sln]
  Failed to restore /home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Tests/NineChronicles.Headless.Tests.cspro
j (in 1.62 sec).
  11 of 14 projects are up-to-date for restore.
[longfin@longfin-desktop-arch NineChronicles.Headless]$
```

NineChronicles.Headless.Executable.csproj - NineChronicles.Headless [SSH: longfin.iptime.org] - Visual Studio Code

.csproj

📡 NineChronicles.Headless.**csproj** NineChronicles.Headless   최근에 사용한 항목 ▯▯ ✕

📡 NineChronicles.Headless.Tests.**csproj** NineChronicles.Headless.Tests

📡 NineChronicles.Headless.Executable.**csproj** NineChronicles.Headless.Executable

📡 NineChronicles.Headless.Executable.Tests.**csproj** NineChronicles.Headless.Executable.Tests

📡 BTAI.**csproj** Lib9c/BTAI   파일 결과

📡 NineChronicles.Headless.Executable.Tests.csproj M ✕   ···

NineChronicles.Headless.Executable.Tests > 📡 NineChronicles.Headless.Executable.Tests.csproj

```
 1   <Project Sdk="Microsoft.NET.Sdk">
 2
 3       <PropertyGroup>
 4           <TargetFramework>net6</TargetFramework>
 5           <LangVersion>10</LangVersion>
 6
 7           <IsPackable>false</IsPackable>
 8           <Nullable>enable</Nullable>
 9       </PropertyGroup>
10
11       <ItemGroup>
12           <PackageReference Include="Microsoft.NET.Test.Sdk" Version="16.9.
13           <PackageReference Include="xunit" Version="2.4.0" />
14           <PackageReference Include="xunit.runner.visualstudio" Version="2.
15           <PackageReference Include="coverlet.collector" Version="1.2.0" />
16       </ItemGroup>
17
18       <ItemGroup>
19           <ProjectReference
20               Include="..\NineChronicles.Headless.Executable\NineChronicles
21       </ItemGroup>
22
23   </Project>
24
```

📡 NineChronicles.Headless.Executable.csproj M ✕   ···

NineChronicles.Headless.Executable > 📡 NineChronicles.Headless.Executable.csproj

```
 1   <Project Sdk="Microsoft.NET.Sdk">
 2
 3       <PropertyGroup>
 4           <OutputType>Exe</OutputType>
 5           <TargetFramework>net6</TargetFramework>
 6           <VersionPrefix>1.0.0</VersionPrefix>
 7           <TreatWarningsAsErrors>true</TreatWarningsAsErrors>
 8           <CodeAnalysisRuleSet>..\NineChronicles.Headless.Common.ruleset</CodeA
 9           <Nullable>enable</Nullable>
10       </PropertyGroup>
11
12       <ItemGroup>
13           <PackageReference Include="AWSSDK.CognitoIdentity" Version="3.7.0.5"
14           <PackageReference Include="AWSSDK.S3" Version="3.7.0.6" />
15           <PackageReference Include="Cocona.Lite" Version="1.5.*" />
16           <PackageReference Include="Destructurama.Attributed" Version="2.0.0"
17           <PackageReference Include="HaemmerElectronics.SeppPenner.Serilog.Sink
18           <PackageReference Include="Sentry.Serilog" Version="2.1.*" />
19           <PackageReference Include="Serilog.Expressions" Version="1.1.1" />
20           <PackageReference Include="Serilog.Formatting.Compact" Version="1.1.0
21           <PackageReference Include="Serilog.Settings.Configuration" Version="3
22           <PackageReference Include="Serilog.Sinks.File" Version="5.0.0" />
23           <PackageReference Include="Serilog.Sinks.PeriodicBatching" Version="2
24           <PackageReference Include="Serilog.Sinks.RollingFile" Version="3.3.0"
25           <PackageReference Include="SonarAnalyzer.CSharp" Version="8.18.0.2729
26               <PrivateAssets>all</PrivateAssets>
27               <IncludeAssets>runtime; build; native; contentfiles; analyzers; bui
28           </PackageReference>
```

📡 NineChronicles.Headless.Tests.csproj M ✕

NineChronicles.Headless.Tests > 📡 NineChronicles.Headless.Tests.csproj

```
 1   <Project Sdk="Microsoft.NET.Sdk">
 2
 3       <PropertyGroup>
 4           <TargetFramework>net6</TargetFramework>
 5           <IsPublishable>false</IsPublishable>
 6           <IsPackable>false</IsPackable>
 7           <IsTestProject>true</IsTestProject>
 8           <TreatWarningsAsErrors>true</TreatWarningsAsErrors>
 9           <CodeAnalysisRuleSet>..\NineChronicles.Headless.Common.ruleset</CodeA
10           <Nullable>enable</Nullable>
11       </PropertyGroup>
12
13       <ItemGroup>
14           <PackageReference Include="Microsoft.NET.Test.Sdk" Version="16.9.4" /
15           <PackageReference Include="SonarAnalyzer.CSharp" Version="8.18.0.2729
16               <PrivateAssets>all</PrivateAssets>
17               <IncludeAssets>runtime; build; native; contentfiles; analyzers; bui
18           </PackageReference>
19           <PackageReference Include="StyleCop.Analyzers" Version="1.1.118">
20               <PrivateAssets>all</PrivateAssets>
21               <IncludeAssets>runtime; build; native; contentfiles; analyzers; bui
22           </PackageReference>
23           <PackageReference Include="xunit" Version="2.4.1" />
24           <PackageReference Include="xunit.runner.visualstudio" Version="2.4.3"
25           <PackageReference Include="coverlet.collector" Version="1.3.0" />
26       </ItemGroup>
27
28       <ItemGroup>
```

```
[longfin@longfin-desktop-arch NineChronicles.Headless]$ dotnet build
Microsoft (R) Build Engine version 17.0.0+c9eb9dd64 for .NET
Copyright (C) Microsoft Corporation. All rights reserved.

  Determining projects to restore...
  All projects are up-to-date for restore.
  NineChronicles.RPC.Shared -> /home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.RPC.Shared/NineChronicles.RPC.Shared/.bin/netstandard2.0/NineChronicles.RPC.Shared.dll
  Libplanet.Stun -> /home/longfin/9c-launcher/NineChronicles.Headless/Lib9c/.Libplanet/Libplanet.Stun/bin/Debug/netstandard2.0/Libplanet.Stun.dll
  Libplanet.Stun -> /home/longfin/9c-launcher/NineChronicles.Headless/Lib9c/.Libplanet/Libplanet.Stun/bin/Debug/netcoreapp3.1/Libplanet.Stun.dll
  Libplanet.Stun -> /home/longfin/9c-launcher/NineChronicles.Headless/Lib9c/.Libplanet/Libplanet.Stun/bin/Debug/netstandard2.1/Libplanet.Stun.dll
  Libplanet -> /home/longfin/9c-launcher/NineChronicles.Headless/Lib9c/.Libplanet/Libplanet/bin/Debug/netstandard2.0/Libplanet.dll
  Libplanet -> /home/longfin/9c-launcher/NineChronicles.Headless/Lib9c/.Libplanet/Libplanet/bin/Debug/netstandard2.1/Libplanet.dll
  Libplanet.Analyzers -> /home/longfin/9c-launcher/NineChronicles.Headless/Lib9c/.Libplanet/Libplanet.Analyzers/bin/Debug/netstandard2.0/Libplanet.Analyzers.dll
  Libplanet -> /home/longfin/9c-launcher/NineChronicles.Headless/Lib9c/.Libplanet/Libplanet/bin/Debug/netcoreapp3.1/Libplanet.dll
  Libplanet.RocksDBStore -> /home/longfin/9c-launcher/NineChronicles.Headless/Lib9c/.Libplanet/Libplanet.RocksDBStore/bin/Debug/netstandard2.0/Libplanet.RocksDBStore.dll
  Libplanet.Analyzers -> /home/longfin/9c-launcher/NineChronicles.Headless/Lib9c/.Libplanet/Libplanet.Analyzers/bin/Debug/netstandard2.1/Libplanet.Analyzers.dll
  Lib9c -> /home/longfin/9c-launcher/NineChronicles.Headless/Lib9c/Lib9c/.bin/netstandard2.0/Lib9c.dll
  Libplanet.Analyzers -> /home/longfin/9c-launcher/NineChronicles.Headless/Lib9c/.Libplanet/Libplanet.Analyzers/bin/Debug/netcoreapp3.1/Libplanet.Analyzers.dll
  Libplanet.Extensions.Cocona -> /home/longfin/9c-launcher/NineChronicles.Headless/Lib9c/.Libplanet/Libplanet.Extensions.Cocona/bin/Debug/netstandard2.0/Libplanet.Extensions.Cocona.dll
  Libplanet.Headless -> /home/longfin/9c-launcher/NineChronicles.Headless/Libplanet.Headless/bin/Debug/netcoreapp3.1/Libplanet.Headless.dll
  Libplanet.Explorer -> /home/longfin/9c-launcher/NineChronicles.Headless/Lib9c/.Libplanet/Libplanet.Explorer/bin/Debug/netcoreapp3.1/Libplanet.Explorer.dll
  Libplanet.Headless.Tests -> /home/longfin/9c-launcher/NineChronicles.Headless/Libplanet.Headless.Tests/bin/Debug/netcoreapp3.1/Libplanet.Headless.Tests.dll
/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless/HostBuilderExtensions.cs(34,17): error CS8634: The type 'Libplanet.Headless.Hosting.LibplanetNodeServiceProperties<Libplanet.Action.PolymorphicAction<Nekoyume.Action.ActionBase>>?' cannot be used as type parameter 'TService' in the generic type or method 'ServiceCollectionServiceExtensions.AddSingleton<TService>(IServiceCollection, Func<IServiceProvider, TService>)'. Nullability of type argument 'Libplanet.Headless.Hosting.LibplanetNodeServiceProperties<Libplanet.Action.PolymorphicAction<Nekoyume.Action.ActionBase>>?' doesn't match 'class' constraint. [/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless/NineChronicles.Headless.csproj]
/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless/Controllers/GraphQLController.cs(285,42): error CS8602: Dereference of a possibly null reference. [/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless/NineChronicles.Headless.csproj]

Build FAILED.

/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless/HostBuilderExtensions.cs(34,17): error CS8634: The type 'Libplanet.Headless.Hosting.LibplanetNodeServiceProperties<Libplanet.Action.PolymorphicAction<Nekoyume.Action.ActionBase>>?' cannot be used as type parameter 'TService' in the generic type or method 'ServiceCollectionServiceExtensions.AddSingleton<TService>(IServiceCollection, Func<IServiceProvider, TService>)'. Nullability of type argument 'Libplanet.Headless.Hosting.LibplanetNodeServiceProperties<Libplanet.Action.PolymorphicAction<Nekoyume.Action.ActionBase>>?' doesn't match 'class' constraint. [/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless/NineChronicles.Headless.csproj]
/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless/Controllers/GraphQLController.cs(285,42): error CS8602: Dereference of a possibly null reference. [/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless/NineChronicles.Headless.csproj]
    0 Warning(s)
    2 Error(s)
```

```csharp
};
return
{

    A reference to this instance after the operation has completed.

    The type 'Libplanet.Headless.Hosting.LibplanetNodeServiceProperties<Libplanet.Action.PolymorphicAction<Nekoyume.Action.ActionBase>>?'
    cannot be used as type parameter 'TService' in the generic type or method 'ServiceCollectionServiceExtensions.AddSingleton<TService>
    (IServiceCollection, Func<IServiceProvider, TService>)'. Nullability of type argument
    'Libplanet.Headless.Hosting.LibplanetNodeServiceProperties<Libplanet.Action.PolymorphicAction<Nekoyume.Action.ActionBase>>?' doesn't
    match 'class' constraint. [NineChronicles.Headless] csharp(CS8634)

    문제 보기 (<Alt>+G <Alt>+N)    빠른 수정을 사용할 수 없음
    services.AddSingleton(provider => properties.Libplanet);
    services.AddSingleton(provider =>
    {
        return new ActionEvaluationPublisher(
            context.NineChroniclesNodeService!.BlockRenderer,
            context.NineChroniclesNodeService!.ActionRenderer,
```

C# HostBuilderExtensions.cs 1   C# NineChroniclesNodeServiceProperties.cs ✕

NineChronicles.Headless > Properties > C# NineChroniclesNodeServiceProperties.cs > {} NineChronicles.Headless.Properties > 🎄 NineChronicles.Headless.P

```csharp
 1    using System;
 2    using System.Collections.Immutable;
 3    using System.Linq;
 4    using Libplanet;
 5    using Libplanet.Crypto;
 6    using Libplanet.Net;
 7    using Libplanet.Headless.Hosting;
 8    using NineChroniclesActionType = Libplanet.Action.PolymorphicAction<Nekoyume.Action.ActionBase>;
 9    using Libplanet.Headless;
10
11    namespace NineChronicles.Headless.Properties
12    {
          2 references
13        public class NineChroniclesNodeServiceProperties
14        {
15            /// <summary>
16            /// Gets or sets a private key that is used in mining and signing transactions,
17            /// which is different with the private key used in swarm to sign messages.
18            /// </summary>
19            /// <seealso cref="LibplanetNodeServiceProperties{T}.SwarmPrivateKey"/>
              1 reference
20            public PrivateKey? MinerPrivateKey { get; set; }
21
              6 references
22            public LibplanetNodeServiceProperties<NineChroniclesActionType>? Libplanet { get; set; }
23
              2 references
24            public NetworkType NetworkType { get; set; } = NetworkType.Main;
25
```

```
:urn builder.ConfigureServices(services =>

    services.AddHostedService(provider => service);
    services.AddSingleton(provider => service);
    services.AddSingleton(provider => service.Swarm
    services.AddSingleton(provider => service.Block
    services.AddSingleton(provider => properties.Libplanet!);
    services.AddSingleton(provider =>
    {
        return new ActionEvaluationPublisher(
            context.NineChroniclesNodeService!.BlockRenderer,
```

Libplanet.Headless.Hosting.LibplanetNodeServiceProperties<Lib
NineChroniclesNodeServiceProperties.Libplanet { get; set; }

'Libplanet' is not null here.

```
27    };
28        return builder.ConfigureServices(services =>
29        {
30            services.AddHostedService(provider => service);
31            services.AddSingleton(provider => service);
32            services.AddSingleton(provider => service.Swarm);
33            services.AddSingleton(provider => service.BlockChain);
34            if (properties.Libplanet is { })
35            {
36                services.AddSingleton(provider => properties.Libplanet);
37            }
38            services.AddSingleton(provider =>
```

```
xt.NotificationSubject.OnNext(notification);

        HttpContext? IHttpContextAccessor.HttpContext { get; set; }

        Gets or sets the current IHttpContextAccessor.HttpContext . Returns null if there is no active IH

  th    'HttpContext' may be null here.

        Dereference of a possibly null reference. [NineChronicles.Headless] csharp(CS8602)
  >     문제 보기 (<Alt>+G <Alt>+N)   빠른 수정을 사용할 수 없음
    | httpContextAccessor.HttpContext.User.HasClaim("role", "Admin");


 · !(_configuration[GraphQLService.SecretTokenKey] is { }) ||
  | (_httpContextAccessor.HttpContext?.User.HasClaim("role", "Admin") ?? false);
```

NineChronicles.Headless.Executable.Tests -> /home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Executable.Tests/bin/Debug/net6/NineChronicles.Headless.Executable.Tests.dll
/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Tests/GraphQLTestUtils.cs(44,29): error CS8600: Converting null literal or possible null value to non-nullable type. [/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Tests/NineChronicles.Headless.Tests.csproj]
/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Tests/GraphQLTestUtils.cs(51,29): error CS8601: Possible null reference assignment. [/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Tests/NineChronicles.Headless.Tests.csproj]
/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Tests/GraphQLStartupTest.cs(36,36): error CS8602: Dereference of a possibly null reference. [/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Tests/NineChronicles.Headless.Tests.csproj]
/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Tests/Controllers/GraphQLControllerTest.cs(177,13): error CS8602: Dereference of a possibly null reference. [/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Tests/NineChronicles.Headless.Tests.csproj]
/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Tests/GraphTypes/States/Models/ShopStateTypeTest.cs(115,55): error CS8604: Possible null reference argument for parameter 'source' in 'ExecutionError Enumerable.First<ExecutionError>(IEnumerable<ExecutionError> source)'. [/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Tests/NineChronicles.Headless.Tests.csproj]
/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Tests/GraphTypes/StandaloneQueryTest.cs(635,83): error CS8604: Possible null reference argument for parameter 'source' in 'ExecutionError Enumerable.First<ExecutionError>(IEnumerable<ExecutionError> source)'. [/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Tests/NineChronicles.Headless.Tests.csproj]
/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Tests/GraphTypes/StandaloneQueryTest.cs(684,17): error CS8604: Possible null reference argument for parameter 'source' in 'ExecutionError Enumerable.First<ExecutionError>(IEnumerable<ExecutionError> source)'. [/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Tests/NineChronicles.Headless.Tests.csproj]
/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Tests/GraphTypes/StandaloneQueryTest.cs(866,31): error CS8604: Possible null reference argument for parameter 'source' in 'ExecutionError Enumerable.First<ExecutionError>(IEnumerable<ExecutionError> source)'. [/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Tests/NineChronicles.Headless.Tests.csproj]

Build FAILED.

/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Tests/GraphQLTestUtils.cs(44,29): error CS8600: Converting null literal or possible null value to non-nullable type. [/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Tests/NineChronicles.Headless.Tests.csproj]
/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Tests/GraphQLTestUtils.cs(51,29): error CS8601: Possible null reference assignment. [/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Tests/NineChronicles.Headless.Tests.csproj]
/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Tests/GraphQLStartupTest.cs(36,36): error CS8602: Dereference of a possibly null reference. [/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Tests/NineChronicles.Headless.Tests.csproj]
/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Tests/Controllers/GraphQLControllerTest.cs(177,13): error CS8602: Dereference of a possibly null reference. [/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Tests/NineChronicles.Headless.Tests.csproj]
/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Tests/GraphTypes/States/Models/ShopStateTypeTest.cs(115,55): error CS8604: Possible null reference argument for parameter 'source' in 'ExecutionError Enumerable.First<ExecutionError>(IEnumerable<ExecutionError> source)'. [/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Tests/NineChronicles.Headless.Tests.csproj]
/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Tests/GraphTypes/StandaloneQueryTest.cs(635,83): error CS8604: Possible null reference argument for parameter 'source' in 'ExecutionError Enumerable.First<ExecutionError>(IEnumerable<ExecutionError> source)'. [/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Tests/NineChronicles.Headless.Tests.csproj]
/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Tests/GraphTypes/StandaloneQueryTest.cs(684,17): error CS8604: Possible null reference argument for parameter 'source' in 'ExecutionError Enumerable.First<ExecutionError>(IEnumerable<ExecutionError> source)'. [/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Tests/NineChronicles.Headless.Tests.csproj]
/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Tests/GraphTypes/StandaloneQueryTest.cs(866,31): error CS8604: Possible null reference argument for parameter 'source' in 'ExecutionError Enumerable.First<ExecutionError>(IEnumerable<ExecutionError> source)'. [/home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Tests/NineChronicles.Headless.Tests.csproj]
    0 Warning(s)
    8 Error(s)

A Few Moments Later

```
[02:01:09 DBG] Swarm stopped.
[02:01:09 DBG] Stopping watching BlockChain for tip changes...
[02:01:09 DBG] Stopping Swarm...
[02:01:10 DBG] Swarm stopped.
[02:01:10 WRN] StartAsync() is canceled.
System.Threading.Tasks.TaskCanceledException: A task was canceled.
   at Libplanet.Net.Transports.TcpTransport.ProcessRuntime(CancellationToken cancellationToken) in /home/longfin/9c-launcher/NineChronicles.Headless/Lib9c/.Libplanet/Libplanet/Net/Transports/TcpTransport.cs:line 772
   at Libplanet.Net.Transports.TcpTransport.StartAsync(CancellationToken cancellationToken) in /home/longfin/9c-launcher/NineChronicles.Headless/Lib9c/.Libplanet/Libplanet/Net/Transports/TcpTransport.cs:line 164
   at Libplanet.Net.Swarm`1.StartAsync(TimeSpan dialTimeout, TimeSpan broadcastBlockInterval, TimeSpan broadcastTxInterval, CancellationToken cancellationToken) in /home/longfin/9c-launcher/NineChronicles.Headless/Lib9
c/.Libplanet/Libplanet/Net/Swarm.cs:line 391
[02:01:10 ERR] Unexpected exception occurred during Swarm.StartAsync(). System.Threading.Tasks.TaskCanceledException: A task was canceled.
   at Libplanet.Net.Transports.TcpTransport.ProcessRuntime(CancellationToken cancellationToken) in /home/longfin/9c-launcher/NineChronicles.Headless/Lib9c/.Libplanet/Libplanet/Net/Transports/TcpTransport.cs:line 772
   at Libplanet.Net.Transports.TcpTransport.StartAsync(CancellationToken cancellationToken) in /home/longfin/9c-launcher/NineChronicles.Headless/Lib9c/.Libplanet/Libplanet/Net/Transports/TcpTransport.cs:line 164
   at Libplanet.Net.Swarm`1.StartAsync(TimeSpan dialTimeout, TimeSpan broadcastBlockInterval, TimeSpan broadcastTxInterval, CancellationToken cancellationToken) in /home/longfin/9c-launcher/NineChronicles.Headless/Lib9
c/.Libplanet/Libplanet/Net/Swarm.cs:line 391
   at Libplanet.Net.Swarm`1.StartAsync(Int32 millisecondsDialTimeout, Int32 millisecondsBroadcastBlockInterval, Int32 millisecondsBroadcastTxInterval, CancellationToken cancellationToken) in /home/longfin/9c-launcher/N
ineChronicles.Headless/Lib9c/.Libplanet/Libplanet/Net/Swarm.cs:line 298
   at Libplanet.Headless.Hosting.LibplanetNodeService`1.StartSwarm(Boolean preload, CancellationToken cancellationToken) in /home/longfin/9c-launcher/NineChronicles.Headless/Libplanet.Headless/Hosting/LibplanetNodeServ
ice.cs:line 440
System.Threading.Tasks.TaskCanceledException: A task was canceled.
   at Libplanet.Net.Transports.TcpTransport.ProcessRuntime(CancellationToken cancellationToken) in /home/longfin/9c-launcher/NineChronicles.Headless/Lib9c/.Libplanet/Libplanet/Net/Transports/TcpTransport.cs:line 772
   at Libplanet.Net.Transports.TcpTransport.StartAsync(CancellationToken cancellationToken) in /home/longfin/9c-launcher/NineChronicles.Headless/Lib9c/.Libplanet/Libplanet/Net/Transports/TcpTransport.cs:line 164
   at Libplanet.Net.Swarm`1.StartAsync(TimeSpan dialTimeout, TimeSpan broadcastBlockInterval, TimeSpan broadcastTxInterval, CancellationToken cancellationToken) in /home/longfin/9c-launcher/NineChronicles.Headless/Lib9
c/.Libplanet/Libplanet/Net/Swarm.cs:line 391
   at Libplanet.Net.Swarm`1.StartAsync(Int32 millisecondsDialTimeout, Int32 millisecondsBroadcastBlockInterval, Int32 millisecondsBroadcastTxInterval, CancellationToken cancellationToken) in /home/longfin/9c-launcher/N
ineChronicles.Headless/Lib9c/.Libplanet/Libplanet/Net/Swarm.cs:line 298
   at Libplanet.Headless.Hosting.LibplanetNodeService`1.StartSwarm(Boolean preload, CancellationToken cancellationToken) in /home/longfin/9c-launcher/NineChronicles.Headless/Libplanet.Headless/Hosting/LibplanetNodeServ
ice.cs:line 440

Passed!  - Failed:     0, Passed:  153, Skipped:     0, Total:   153, Duration: 13 s - /home/longfin/9c-launcher/NineChronicles.Headless/NineChronicles.Headless.Tests/bin/Debug/net6/NineChronicles.Headless.Tests.dll (
net6.0)
[longfin@longfin-desktop-arch NineChronicles.Headless]$
```

```yaml
 9            os:
10              - ubuntu-latest
11              - windows-latest
12        runs-on: ${{ matrix.os }}
13        steps:
14          - uses: actions/checkout@v2
15            with:
16              submodules: recursive
17          - name: Setup .NET Core
18            uses: actions/setup-dotnet@v1
19            with:
20              dotnet-version: 6.0.*
21          - name: Install dependencies
22            run: dotnet restore
23          - name: Build and test
24            run: dotnet test --configuration Release --no-restore --verbosity normal
25
26      build-and-test:
27        needs: [build-and-tests]
28        runs-on: ubuntu-latest
29        steps:
30          - run: echo done
31
```

```
/analyzer:/home/runner/.nuget/packages/sonaranalyzer.csharp/8.18.0.27296/analyzers/Google.Protobuf.dll /analyzer:/home/runner/.nuget/packages/sonaranalyzer.csharp/8.18.0.27296/analyzers/SonarAnalyzer.CFG.dll
/analyzer:/home/runner/.nuget/packages/sonaranalyzer.csharp/8.18.0.27296/analyzers/SonarAnalyzer.CSharp.dll /analyzer:/home/runner/.nuget/packages/sonaranalyzer.csharp/8.18.0.27296/analyzers/SonarAnalyzer.dll
/analyzer:/home/runner/.nuget/packages/stylecop.analyzers/1.1.118/analyzers/dotnet/cs/StyleCop.Analyzers.CodeFixes.dll /analyzer:/home/runner/.nuget/packages/stylecop.analyzers/1.1.118/analyzers/dotnet/cs/StyleCop.Analyzers.dll
/analyzer:/home/runner/.dotnet/packs/Microsoft.NETCore.App.Ref/6.0.0/analyzers/dotnet/cs/System.Text.Json.SourceGeneration.dll BlockChainExtensions.cs Hosting/DevLibplanetNodeService.cs Hosting/LibplanetNodeService.cs Hosting/LibplanetNodeServiceProperties.cs IceServerInvalidException
PeerInvalidException.cs PropertyParser.cs ReducedStore.cs "obj/Release/net6.0/.NETCoreApp,Version=v6.0.AssemblyAttributes.cs" obj/Release/net6.0/Libplanet.Headless.AssemblyInfo.cs /warnaserror+:NU1605
```

```
      2>/home/runner/work/NineChronicles.Headless/NineChronicles.Headless/Libplanet.Headless/Hosting/LibplanetNodeService.cs(614,40): error SYSLIB0014: 'WebClient.WebClient()' is obsolete: 'WebRequest, HttpWebRequest, ServicePoint, and WebClient are obsolete. Use HttpClient instead.'
[/home/runner/work/NineChronicles.Headless/NineChronicles.Headless/Libplanet.Headless/Libplanet.Headless.csproj]
        CompilerServer: server - server processed compilation - 7a198766-3cb9-4e88-8406-5edb1d8a77fd
    2>Done Building Project "/home/runner/work/NineChronicles.Headless/NineChronicles.Headless/Libplanet.Headless/Libplanet.Headless.csproj" (default targets) -- FAILED.
    9>Done Building Project "/home/runner/work/NineChronicles.Headless/NineChronicles.Headless/NineChronicles.Headless/NineChronicles.Headless.csproj" (default targets) -- FAILED.
   10>Done Building Project "/home/runner/work/NineChronicles.Headless/NineChronicles.Headless/NineChronicles.Headless.Executable/NineChronicles.Headless.Executable.csproj" (default targets) -- FAILED.
   12>Done Building Project "/home/runner/work/NineChronicles.Headless/NineChronicles.Headless/NineChronicles.Headless.Executable.Tests/NineChronicles.Headless.Executable.Tests.csproj" (default targets) -- FAILED.
   12>Done Building Project "/home/runner/work/NineChronicles.Headless/NineChronicles.Headless/NineChronicles.Headless.Executable.Tests/NineChronicles.Headless.Executable.Tests.csproj" (VSTest target(s)) -- FAILED.
    4>Done Building Project "/home/runner/work/NineChronicles.Headless/NineChronicles.Headless/Libplanet.Headless.Tests/Libplanet.Headless.Tests.csproj" (default targets) -- FAILED.
    4>Done Building Project "/home/runner/work/NineChronicles.Headless/NineChronicles.Headless/Libplanet.Headless.Tests/Libplanet.Headless.Tests.csproj" (VSTest target(s)) -- FAILED.
   11>Done Building Project "/home/runner/work/NineChronicles.Headless/NineChronicles.Headless/NineChronicles.Headless.Tests/NineChronicles.Headless.Tests.csproj" (default targets) -- FAILED.
   11>Done Building Project "/home/runner/work/NineChronicles.Headless/NineChronicles.Headless/NineChronicles.Headless.Tests/NineChronicles.Headless.Tests.csproj" (VSTest target(s)) -- FAILED.
```

```csharp
else if (!string.IsNullOrEmpty(properties.GenesisBlockPath))
{
    byte[] rawBlock;
    if (File.Exists(Path.GetFullPath(properties.GenesisBlockPath)))
    {
        rawBlock = File.ReadAllBytes(Path.GetFullPath(properties.GenesisBlockPath));
    }
    else
    {
        var uri = new Uri(properties.GenesisBlockPath);
        using var client = new WebClient();
        rawBlock = client.DownloadData(uri);
    }
    var blockDict = (Bencodex.Types.Dictionary)Codec.Decode(rawBlock);
    return BlockMarshaler.UnmarshalBlock<T>(hashAlgorithmGetter, blockDict);
}
else
```

```csharp
            }
            else if (!string.IsNullOrEmpty(properties.GenesisBlockPath))
            {
                byte[] rawBlock;
                if (File.Exists(Path.GetFullPath(properties.GenesisBlockPath)))
                {
                    rawBlock = File.ReadAllBytes(Path.GetFullPath(properties.GenesisBlockPath));
                }
                else
                {
                    var uri = new Uri(properties.GenesisBlockPath);
                    using var client = new HttpClient();
                    // FIXME We should process more asynchronously without .Result.
                    rawBlock = client.GetAsync(uri).Result.Content.ReadAsByteArrayAsync().Result;
                }
                var blockDict = (Bencodex.Types.Dictionary)Codec.Decode(rawBlock);
                return BlockMarshaler.UnmarshalBlock<T>(hashAlgorithmGetter, blockDict);
            }
            else
```

Bump .NET Runtime to 6 build #680

Jobs

build-and-tests (ubuntu-latest)

build-and-tests (windows-latest)

build-and-test

Triggered via pull request 2 months ago

longfin synchronize #859 `longfin:feature/net6`

Status	Total duration	Artifacts
Success	6m 18s	–

build.yml
on: pull_request

Matrix: build-and-tests

2 jobs completed

Show all jobs

build-and-test   1s

THIS →

is

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고맙습니다!