# Microsoft Azure Service Fabric 6.4 Fifth Refresh Release Notes

This release includes the bug fixes and features described in this document. This release includes runtime, SDKs and Windows Server Standalone deployments to run on-premises.

The following packages and versions are part of this release

| | | |
|---|---|---|
| **Service Fabric Runtime** | Ubuntu | *6.4.649.1* |
| | Windows | *6.4.654.9590* |
| | Red Hat Enterprise | *6.1.189.1* |
| **Service Fabric for Windows Server** | Service Fabric Standalone Installer Package | *6.4.654.9590* |
| **.NET SDK** | Windows .NET SDK | *3.3.654* |
| | Microsoft.ServiceFabric | *6.4.654* |
| | Reliable Services and Reliable Actors | *3.3.654* |
| | ASP.NET Core Service Fabric integration | *3.3.654* |
| **Java SDK** | Java for Linux SDK | *1.0.3* |

# Contents

# Upcoming Breaking change announcements in 6.5

## Node state removal not supported for seed nodes by default

Starting in Service Fabric version 6.5, node state removal will not be supported for seed nodes by default. Specifically, invoking the following interfaces on seed nodes will fail.

- .NET API: FabricClient.ClusterManagementClient.RemoveNodeStateAsync. The API will throw a FabricException when invoked for a seed node.
- PowerShell: Remove-ServiceFabricNodeState
- REST API: Remove Node State
- CLI: sfctl node remove-state

The following message will be included in the exception (for the .NET API) or displayed in the UI (for the other interfaces).

"***Remove node state on node {NodeName} failed because it is a seed node. Remove node state is not allowed for seed node.***"

Users that have any code or scripts that invoke any of the above interfaces for seed nodes should update their code or scripts to avoid doing this. If node state removal for a seed node must be performed, then the recommendation is that users should first convert the seed node into a non-seed node and then remove the node state after the conversion is complete. Detailed guidance on converting seed nodes into non-seed nodes will be available with the release of Service Fabric version 6.5, when this change will take effect.

The reason for this change is as follows. A Service Fabric cluster requires a quorum of seed nodes to be up. If a quorum of seed nodes is not up, the cluster goes down. Node state removal erases the node from the databases of all Service Fabric system services, including the health management service. As a result, when the node state is removed, the health management service removes all the error events associated with that node. This includes the error event which previously notified the user that a seed node in the cluster is down. Therefore, the down seed node remains unnoticed and the cluster to appear healthy even though it is not. For this reason, node state removal of seed nodes will be disallowed.

A cluster configuration will be available for users who want the non-default behavior that enables node state removal for seed nodes. Details about this cluster configuration will be available with the release of Service Fabric version 6.5.

# Service Fabric Runtime

| Versions | IssueType | Description | Resolution |
|---|---|---|---|
| **Windows** 6.4.654.9590<br><br>**Ubuntu** 6.4.649.1 | **Bug** | Deletion of application code packages from a node leaves local ImageCache in an error state. | **Impact**: This could potentially lead to Service Fabric assuming a package is intact when it's partially deleted. These packages would have to be repaired on the node manually by either copying the missing files to the node or deleting the corrupted content.<br>**Fix**: Service Fabric will now mark the package as invalid by deleting its corresponding checksum first, forcing the package to be re-downloaded if it's used again. This ensures re-provisioning of app code packages are intact. |
| **Ubuntu** 6.4.649.9590 | **Bug** | NET Core 2.1 application fails to start on Linux (Ubuntu) cluster<br><br>**GitHub issue:**<br>https://github.com/Azure/service-fabric-issues/issues/1178 | **Workaround**:<br>Remove LD_LIBRARY_PATH specification.<br><br>**Fix**: Fixed by preventing multiple entries of LD_LIBRARY_PATH when launching processes on Linux. |
| **Ubuntu** 6.4.649.9590 | **Feature** | Developers were unable to use same service manifest to deploy to Linux clusters. | **Impact**: We allowed only the serviceName to be mentioned in the serviceManifest's exehost for Windows clusters.<br>**Fix**: Service Manifest would allow "serviceName" also instead of only "serviceName.exe" in the exehost for windows cluster. Also, the application package validation will ensure that the "serviceName.exe" file is indeed present at that location. |
| **Windows** 6.4.654.9590<br><br>**Ubuntu** 6.4.649.1 | **Feature** | Clean up unused application type automatically in the image store. | Added support for 2 new cluster management parameters<br>• CleanupUnusedApplicationTypes<br>• MaxUnusedAppTypeVersionsToKeep<br><br>https://docs.microsoft.com/en-us/azure/service-fabric/service-fabric-cluster-fabric-settings#management<br><br>For standalone clusters, these parameters can be updated in clusterconfig.json using https://docs.microsoft.com/en-us/azure/service-fabric/service-fabric-cluster-config-upgrade-windows-server<br><br>For ARM deployed app types, the portal may not reflect current versions of app type. This limitation will be fixed for v6.5. It will be turned off by default. ARM model support for this feature will be coming in future release. |

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| **Ubuntu** 6.4.649.1 | **Bug** | Linux Container setup: Switch from docker-ce to moby | Service Fabric for Ubuntu runtime installer is no longer depending on docker-ce and is migrating to use moby-engine and moby-cli packages for docker operations. |

## Service Fabric Common Bug Fixes

| Versions | Description | Resolution |
|---|---|---|
| **Ubuntu** 6.4.649.1<br>**Windows** 6.4.654.9590 | Increased number of reboots occurring during cluster upgrade to handle contention with service fabric runtime files. | Reduced occurrence rate of reboots during cluster upgrade for user-induced cases. |
| **Ubuntu** 6.4.649.1<br>**Windows** 6.4.654.9590 | Node crashes during Service Fabric cluster upgrade due to old version files not being cleaned properly. | Performs a reboot gracefully by scheduling a cleanup operation instead of node crash during upgrade scenarios |
| **Windows** 6.4.654.9590 | Installer service crashes during Service Fabric code upgrade due to old version files not being cleaned properly. | Provides a fallback mechanism to self-repair instead of crashing. Performs a reboot gracefully by scheduling a cleanup operation during code upgrade scenarios |
| **Windows** 6.4.654.9590 | When upgrade is experiencing some trouble and requires restarts then VMSS machines are being rebooted for Windows updates | Fixed a stability issue for a deployment component for scenarios where it may be terminated early. |

## Service Fabric JAVA SDK Fixes

| Versions | Issue Type | Description | Resolution |
|---|---|---|---|
| JAVA SDK 1.0.3 | Bug | API that reports load for stateless/stateful service partitions crashes for Java workloads | Fixed service code to be able to report load on the partition.<br>Impact was for Java workloads using reportLoad API |

## Repositories and Download Links

The table below is an overview of the direct links to the packages associated with this release.

Follow this guidance for setting up your developer environment:

- Linux: https://docs.microsoft.com/en-us/azure/service-fabric/service-fabric-get-started-linux
- Mac: https://docs.microsoft.com/en-us/azure/service-fabric/service-fabric-get-started-mac
- Windows: https://docs.microsoft.com/en-us/azure/service-fabric/service-fabric-get-started

| Area | Package | Version | Repository | Direct Download Link |
|---|---|---|---|---|
| **Service Fabric Runtime** | Ubuntu Developer Set-up | 6.4.649.1 | N/A | Cluster Runtime: https://apt-mo.trafficmanager.net/repos/servicefabric/pool/main/s/servicefabric<br><br>Service Fabric SDK for local cluster setup: https://apt-mo.trafficmanager.net/repos/servicefabric/pool/main/s/servicefabricsdkcomm on/<br><br>Container image: https://hub.docker.com/r/microsoft/ser vice-fabric-onebox/ |
| | Red Hat Developer Set-up | 6.1.189.1 | N/A | Cluster Runtime: https://packages.microsoft.com/yumre pos/microsoft-rhel7.4-prod/<br><br>Service Fabric SDK for local cluster setup: https://packages.microsoft.com/yumre pos/microsoft-rhel7.4-prod/servicefabric_sdkcommon_1.1.2.r pm |
| | Windows Developer Setup | 6.4.654.9590 | N/A | https://download.microsoft.com/download/8/5/A/85A670E8-47DB-4FAF-A63A-8E89B6284220/MicrosoftServiceFabric.6.4.654.9590.exe |
| **Service Fabric for Windows Server** | Service Fabric Standalone Installer Package | 6.4.654.9590 | N/A | https://download.microsoft.com/download/8/3/6/836E3E99-A300-4714-8278-96BC3E8B5528/6.4.654.9590/Microsoft.Azure.ServiceFabric.WindowsServer.6.4.654.9590.zip |

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| | Service Fabric Standalone Runtime | 6.4.654.9590 | N/A | https://download.microsoft.com/download/B/0/B/B0BCCAC5-65AA-4BE3-AB13-D5FF5890F4B5/6.4.654.9590/MicrosoftAzureServiceFabric.6.4.654.9590.cab |
| **.NET SDK** | Windows .NET SDK | 3.3.654 | N/A | https://download.microsoft.com/download/8/5/A/85A670E8-47DB-4FAF-A63A-8E89B6284220/MicrosoftServiceFabricSDK.3.3.654.msi |
| | Microsoft.ServiceFabric | 6.4.654 | N/A | https://www.nuget.org |
| | Reliable Services and Reliable Actors<br>• Microsoft.ServiceFabric.Services<br>• Microsoft.ServiceFabric.Services.Remoting<br>• Microsoft.ServiceFabric.Services.Wcf<br>• Microsoft.ServiceFabric.Actors<br>• Microsoft.ServiceFabric.Actors.Wcf | 3.3.654 | https://github.com/Azure/servicefabric-services-and-actors-dotnet | https://www.nuget.org |
| | ASP.NET Core Service Fabric integration<br>• Microsoft.ServiceFabric.Services.AspNetCore.* | 3.3.654 | https://github.com/Azure/servicefabric-aspnetcore | https://www.nuget.org |
| | Data, Diagnostics and Fabric transport<br>• Microsoft.ServiceFabric.Data<br>• Microsoft.ServiceFabric.Data.Interfaces<br>• Microsoft.ServiceFabric.Diagnostics.Internal | 3.3.654 | N/A | https://www.nuget.org |

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|---|---|---|---|---|
| | Microsoft.ServiceFabric.FabricTransport.Internal | | | |
| | Microsoft.ServiceFabric.Data.Extensions | 1.4.654 | N/A | https://www.nuget.org |

| Area | Package | Version | Repository | Direct Download Link |
|---|---|---|---|---|
| **Java SDK** | Java SDK | 1.0.3 | N/A | https://mvnrepository.com/artifact/com.microsoft.servicefabric/sf-actors/1.0.3 |
| **Visual Studio** | Visual Studio 2017 Tools for Service Fabric | 2.4.11024.1 | N/A | Included in Visual Studio 2017 Update 7 (15.7) and above |
| | Visual Studio 2015 Tools for Service Fabric | 2.4.11116.1 | N/A | See localized download links below |
| **Eclipse** | Service Fabric plug-in for Eclipse | 2.0.7 | N/A | N/A |
| **Yeoman** | Azure Service Fabric Java generator | 1.0.7 | https://github.com/Azure/generator -azuresfjava | N/A |
| | Azure Service Fabric C# generator | 1.0.9 | https://github.com/Azure/generator -azuresfcsharp | N/A |
| | Azure Service Fabric guest executables generator | 1.0.1 | https://github.com/Azure/generator -azuresfguest | N/A |

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|---|---|---|---|---|
| | Azure Service Fabric Container generators | 1.0.1 | https://github.com/Azure/generator - azuresfcontainer | N/A |
| **CLI** | Service Fabric CLI | 7.1.0 | https://github.com/Azure/servicefabric-cli | https://pypi.python.org/pypi/sfctl |
| **PowerShell** | AzureRM.Service Fabric | 0.3.15 | https://github.com/Azure/azurepowershell/tree/preview/src/Resou rceManager/ServiceFabric | https://www.powershellgallery.com/packages/AzureRM.ServiceFabric/0.3.15 |

## Visual Studio 2015 Tool for Service Fabric – localized download links

**NOTE:** The below download links are for the 2.4.11116.1 release of Visual Studio 2015 Tools for Service Fabric.

https://download.microsoft.com/download/8/5/A/85A670E8-47DB-4FAF-A63A-8E89B6284220/MicrosoftAzureServiceFabricTools.VS140.de-de.msi

https://download.microsoft.com/download/8/5/A/85A670E8-47DB-4FAF-A63A-8E89B6284220/MicrosoftAzureServiceFabricTools.VS140.en-us.msi

https://download.microsoft.com/download/8/5/A/85A670E8-47DB-4FAF-A63A-8E89B6284220/MicrosoftAzureServiceFabricTools.VS140.es-es.msi

https://download.microsoft.com/download/8/5/A/85A670E8-47DB-4FAF-A63A-8E89B6284220/MicrosoftAzureServiceFabricTools.VS140.fr-fr.msi

https://download.microsoft.com/download/8/5/A/85A670E8-47DB-4FAF-A63A-8E89B6284220/MicrosoftAzureServiceFabricTools.VS140.it-it.msi

https://download.microsoft.com/download/8/5/A/85A670E8-47DB-4FAF-A63A-8E89B6284220/MicrosoftAzureServiceFabricTools.VS140.ja-jp.msi

https://download.microsoft.com/download/8/5/A/85A670E8-47DB-4FAF-A63A-8E89B6284220/MicrosoftAzureServiceFabricTools.VS140.ko-kr.msi

https://download.microsoft.com/download/8/5/A/85A670E8-47DB-4FAF-A63A-8E89B6284220/MicrosoftAzureServiceFabricTools.VS140.ru-ru.msi

https://download.microsoft.com/download/8/5/A/85A670E8-47DB-4FAF-A63A-8E89B6284220/MicrosoftAzureServiceFabricTools.VS140.zh-cn.msi

https://download.microsoft.com/download/8/5/A/85A670E8-47DB-4FAF-A63A-8E89B6284220/MicrosoftAzureServiceFabricTools.VS140.zh-tw.msi