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| **SharePoint Cumulative Update (Sep 2017 package)**  **Deployment Plan** |

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| **Project/Patch ID** | Cumulative Update Installation |
| **Module** | Patch Deployment |
| **Release Number** | CU Sep 2017 |

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| **Reviewed By** | NA |
| **Release Date** | 04/13/2018 |
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| **Functionality Delivered** |
| Application of Cumulative Update patch release by Microsoft in Sep 2017 to address security issues. |

| **Shipment Deliverables** |
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| Cumulative Update patch installation on all 6 server of SharePoint on prem farm. |

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| **Open Defects/Issues** |
| None |

| **Backups** |
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| 1. Take SharePoint Servers Snapshot (to be performed by infrastructure Team)   Take VM Snapshot of all the SharePoint servers. Though we will take separate backups of different components of farm individually but those will not be enough to do a complete farm restoration if something goes wrong and in that case we will have to rely upon the snapshots for restoration. Take a look at this link below to know in detail about SharePoint Snapshots.  <https://blogs.msdn.microsoft.com/mossbiz/2013/01/14/sharepoint-vs-snapshots/>   1. Farm Backup   Take a SharePoint farm backup using the backup option in Central Administration site. This can also be done using the below mentioned PowerShell command.  **Backup-SPFarm -Directory <BackupFolder> -BackupMethod {Full | Differential} [-Verbose]**   1. Configuration and Content Databases   Take backup of Configuration and Content Databases using SQL Server Management Studio  Also back up all the customizations in the farm, follow steps mentioned at the following URL  <https://technet.microsoft.com/en-us/library/ee748642.aspx>   1. WSP Backup   Backup all the WSP files which are deployed in the farm. This can be done using the following mentioned PowerShell script.  $dirName = "c:\Solutions"  foreach ($solution in Get-SPSolution) {       $id = $Solution.SolutionID       $title = $Solution.Name       $filename = $Solution.SolutionFile.Name       $solution.SolutionFile.SaveAs("$dirName\$filename")  } For more details on how to download the WSP files from SharePoint visit the following link.  [http://www.sharepointdiary.com/2011/10/extract-download-wsp-files-from-installed- solutions.html#ixzz5BulT47S8](http://www.sharepointdiary.com/2011/10/extract-download-wsp-files-from-installed-%20%20%20%20%20%20%20solutions.html#ixzz5BulT47S8)   1. Web.Config Backup   Take backup of all **WEB.CONFIG** files in IIS (all servers). |

| **Prerequisites** |
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| 1. Resolve Health Analyzer Errors Related to Missing Server Side Dependencies   Go to Health Analyzer, click on Missing Server Side Dependencies, and look for the errors which say “*The missing feature might cause upgrade to fail. If necessary, please install any solution that contains the feature and restart upgrade*” and fix them before running the CU.    Following PowerShell script will have to be executed for every feature based on the GUID coming under Health Analyzer log.  function Remove-SPFeatureFromContentDB($ContentDb, $FeatureId, [switch]$ReportOnly)  {  $db = Get-SPDatabase | where { $\_.Name -eq $ContentDb }  [bool]$report = $false  if ($ReportOnly) { $report = $true }  $db.Sites | ForEach-Object {  Remove-SPFeature -obj $\_ -objName "site collection" -featId $FeatureId -report $report  $\_ | Get-SPWeb -Limit all | ForEach-Object {  Remove-SPFeature -obj $\_ -objName "site" -featId $FeatureId -report $report  }  }  }  function Remove-SPFeature($obj, $objName, $featId, [bool]$report)  {  $feature = $obj.Features[$featId]  if ($feature -ne $null) {  if ($report) {  write-host "Feature found in" $objName ":" $obj.Url -foregroundcolor Red  }  else  {  try {  $obj.Features.Remove($feature.DefinitionId, $true)  write-host "Feature successfully removed from" $objName ":" $obj.Url -foregroundcolor Red  }  catch {  write-host "There has been an error trying to remove the feature:" $\_  }  }  }  else {  #write-host "Feature ID specified does not exist in" $objName ":" $obj.Url  }  }  #To remove the feature from all sites, site collections in the db run (no -ReportOnly property):  Remove-SPFeatureFromContentDB -ContentDB "ContentDBName" -FeatureId "FeatureGuidID"   1. Suspend Search Service   Suspending the Search service is a very important step to do prior to installing the CU and failing to do so might break the search crawl which may lead to inadvertent results. In the worst case, you might end up rebuilding the entire search application.  Hence to make sure there is no crawl running or no crawl will be triggered during the installation, we will have to pause the search application. For this, run the following PowerShell script  Suspend-SPEnterpriseSearchServiceApplication –Identity “SearchServiceApplicationName”  This will take a couple of minutes to execute. Once it is executed, navigate to the search service application in central admin and verify the status, it should be showing as “Paused: for external request” as shown in the image below  Description: 5.png  If you go to Content Sources, you should see the status as “Paused by system”.  Description: 6 |

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| **4. Deployment – Install the Cumulative Update – Repeat on all servers** |
| Installing the CU doesn’t require any specific order, this can be done on any servers in the farm, however, it’s recommended to start with the WFE server.   1. Download September 2017 CU from the following URL   <https://www.microsoft.com/en-us/download/details.aspx?id=55868>   1. Navigate to the folder where CU package has been downloaded and start installing it. Please note, it’s mandatory to keep all the three executables (package as well as Cabinet files) in the same folder as shown in the screenshot below.   Description: 7.png   1. On the “End user license agreement page”, select the accept checkbox and click continue.   Description: 8   1. Now it will start the installation. The installation will take around 30-40 minutes. It will first start with extracting the files as shown in the screenshot below.   Description: 9   1. On the next screen, it will be loading the files to be updated as shown in the image below.   Description: 10   1. On the next screen, it will be installing the package as shown in the image below.   Description: 11   1. Post installation, if it prompts for the reboot, click “Yes” as shown in the image below.   Description: 12   1. Once the installation is complete, go to Control Panel and verify whether the package has been installed correctly as shown in the image below.   Description: 13 |

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| **4. Deployment – Run SharePoint Configuration Wizard – Repeat on all servers** |
| Once the CU package has been installed successfully and it’s showing up correctly under Control Panel now it’s time to run the SharePoint Configuration Wizard.  **Points to be noted while running the SharePoint Configuration Wizard:**  Unlike the CU installation you can’t run the **“SharePoint Configuration Wizard”** in any order, it must be running on the server which is hosting ***“Central Administration”*** site first and then on the WFE and APP servers.  It’s a 6-step process which might take an hour at the max (in an ideal scenario) to run and complete. Once it’s completed successfully on the server where Central Admin (CA) is hosted, try opening the Central Admin site and make sure everything looks fine and you’re able to access the SharePoint sites. If the CA site is not coming up, please stop and fix it. Without fixing the CA site issue, please don’t proceed further with running the **Configuration wizard** on the other servers.  Follow the below steps in order for running the configuration wizard  Open SharePoint management shell and executed the following PowerShell script  *PSConfig.exe -cmd upgrade -inplace b2b -force -cmd applicationcontent -install -cmd installfeatures*  Description: 14  It will take few seconds and start the upgrade process.  Description: 15  Description: 16  Description: 17  Description: 18  The configuration wizard will have 6 steps which will be executed one by one. It should complete all 6 steps successfully. If it fails somewhere in the middle, you will need to check the ***“PSDiagnostics Logs”*** in the ULS logs folder. Find the issue, fix it first and then run the above command again until completed successfully. |

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| **6. POST INSTALLATION STEPS – Smoke Test** |
| 1. Verify all the SharePoint and IIS services are up and running. If not, start them. 2. Go to IIS Manager and verify application pools and sites are in started/running state. 3. Open CA and the web applications and make sure they are opening fine. 4. Go to ***“Manage servers in the farm”*** section in CA and check for the version number on Configuration database version and make sure it’s showing the version number correctly. 5. Check **“Manage Servers in this Farm”** page in Central Administration. This page will also show if you need to run the SharePoint Products Configuration Wizard on a server to complete the upgrade process. Make sure every server in your SharePoint farm is upgraded and displays the status as **“No Action Required”**as shown in the image below.   Description: patch 3.png   1. Check the patch status on each and every individual server with **“Manage patch status page”** **(Central Administration >> Upgrade and** Migration **>> Check product and patch installation status**)   Description: patch 1.PNG  Description: patch-2   1. Check the **“upgrade status”** page which will give the detailed information on upgrade status as shown in the image below.   Description: patch-4   1. Resume the search service application using the below-mentioned PowerShell command   *Resume-SPEnterpriseSearchServiceApplication –Identity “SearchServiceApplicationName”*   1. Verify search service application is not paused and it’s in running state.   Description: 21   1. Go to the content sources section in the Search administration page and kick-start a full-crawl. 2. Check all the custom functionalities on the farm site such as third-party WSP’s, site features, custom web parts, custom site templates etc. and make sure everything is working fine. |

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| **7. ROLLBACK PLAN** |
| **1. SharePoint Servers VM Snapshot**  In worst case scenario, it is better to restore a Snapshot of all the SharePoint servers, though we will have a complete farm backup in place, usually, it is not recommended for complete farm restoration.  **2. Errors occurred after CU Installation**  If some errors have occurred after the CU installation in any of the web applications or in some of the features of the web applications, on the basis of those errors we can either deploy the WSP’s or restore the Content Database to get things working. |

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| **Any other considerations** |
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