3-3-6：每月巡检-统计邮件平台环境报告并输出HTML

作者简介

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属于实战派的讲师，具备丰富的万人规模以上企业的运维经验。课程内容侧重于实战实用。

曾垂鑫的博客地址：http://543925535.blog.51cto.com/
曾垂鑫的课程地址：http://edu.51cto.com/lecturer/index/user_id-639838.html

课程后续会形成完善的Windows运维工程师路线图，涵盖企业常用的Windows平台运维技术，后期课程包括但不限于AD、Exchange、Windows、System Center、Powershell、Hyper-v、Office 365等。

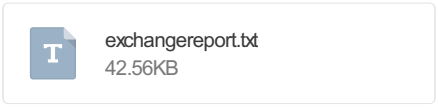
场景

查看整个环境的具体情况，每个月可以输出一次。

脚本下载地址：

Generate Exchange Environment Reports using Powershell 示例
https://gallery.technet.microsoft.com/exchange/Generate-Exchange-2388e7c9

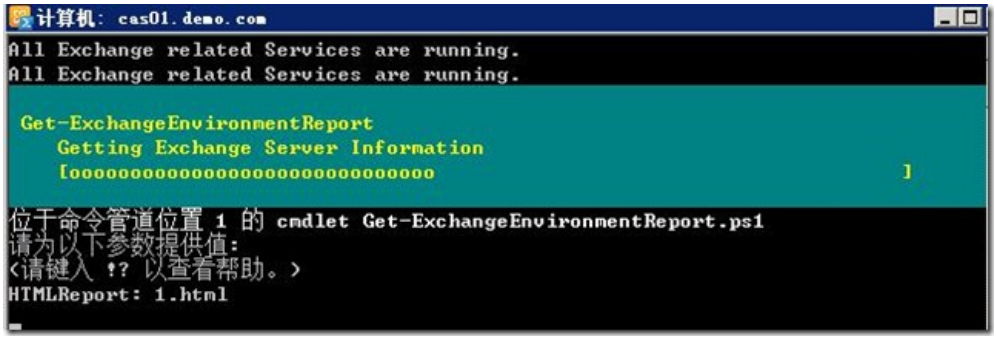
脚本来自于脚本中心，非常好用，可以获取到我们当前exchange环境的配置情况。
比如：服务器的数量、数据库的数量、用户数量、服务器的版本、操作系统的版本、邮箱大小等。
下载地址如下：
Generate Exchange Environment Reports using Powershell 示例
https://gallery.technet.microsoft.com/exchange/Generate-Exchange-2388e7c9
这个脚本非常易于使用，不需要做任何修改，直接在powershell中运行即可。
脚本是带param的，所以后面可以指定参数，如图。




```
param(
    [parameter(Position=0,Mandatory=$true,ValueFromPipeline=$false,HelpMessage='Filename to
write HTML report to'))][string]$HTMLReport,
        [parameter(Position=1,Mandatory=$false,ValueFromPipeline=$false,HelpMessage='Send
Mail ($True/$False)'))][bool]$SendMail=$false,
        [parameter(Position=2,Mandatory=$false,ValueFromPipeline=$false,HelpMessage='Mail
From'))][string]$MailFrom,
        [parameter(Position=3,Mandatory=$false,ValueFromPipeline=$false,HelpMessage='Mail
To'))]$MailTo,
        [parameter(Position=4,Mandatory=$false,ValueFromPipeline=$false,HelpMessage='Mail
Server'))][string]$MailServer,
        [parameter(Position=4,Mandatory=$false,ValueFromPipeline=
$false,HelpMessage='Schedule as user'))][string]$ScheduleAs,
        [parameter(Position=5,Mandatory=$false,ValueFromPipeline=$false,HelpMessage='Change
view to entire forest'))][bool]$ViewEntireForest=$true,
        [parameter(Position=5,Mandatory=$false,ValueFromPipeline=$false,HelpMessage='Server
Name Filter (eg NL-*)'))][string]$ServerFilter="*"
    )
```

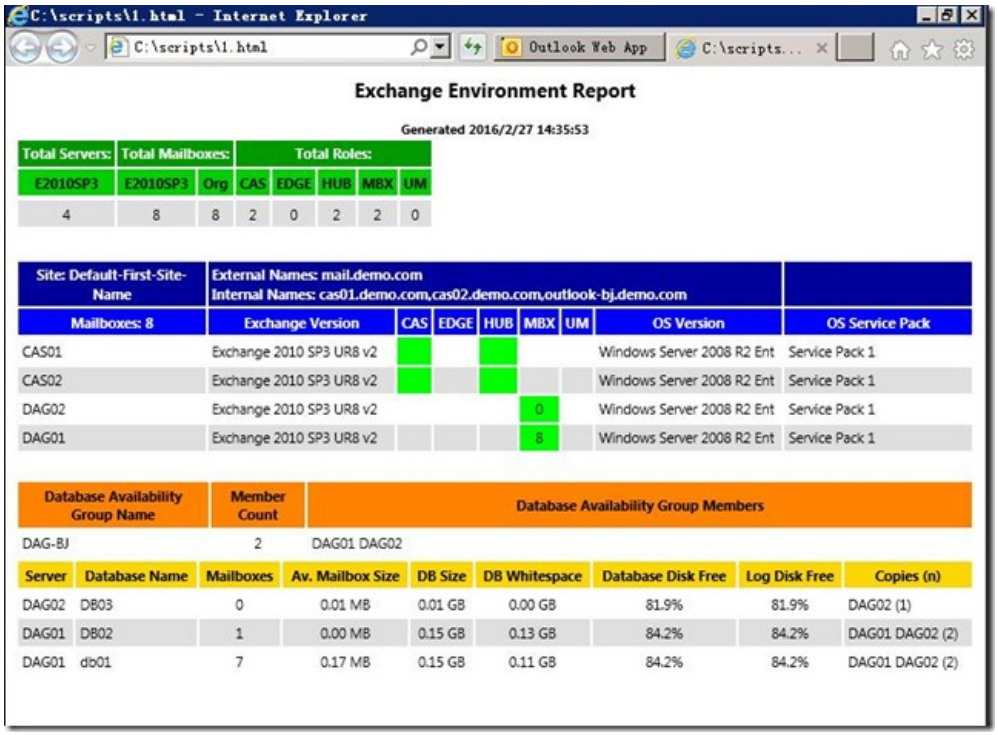
c7ff88ddbe4342b69decb15a0dc51e48

下图我输入了要保存为html的报告的名称，在这个脚本中HTMLReport是强制参数，必须提供值的。



fded7965f64844eead35a3cc6c51fa93

跑完了之后，生成的html如图所示。



7f531c899fca47ebb1f491294dc54731

改过后的脚本如下，整个拷贝到TXT中，重命名为PS1格式。

```
<#
  .SYNOPSIS
  Creates a HTML Report describing the Exchange environment

  Steve Goodman

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RISK OF THE USE OR THE RESULTS FROM THE USE OF THIS CODE REMAINS WITH THE USER.

Version 1.6.1 September 2015

  .DESCRIPTION

  This script creates a HTML report showing the following information about an Exchange
  2016, 2013, 2010 and to a lesser extent, 2007 and 2003, environment.

  The following is shown:

* Report Generation Time
* Total Servers per Exchange Version (2003 > 2010 or 2007 > 2016)
* Total Mailboxes per Exchange Version, Office 365 and Organisation
```

* Total Roles in the environment

Then, per site:
* Total Mailboxes per site
  * Internal, External and CAS Array Hostnames
* Exchange Servers with:
 o Exchange Server Version
 o Service Pack
 o Update Rollup and rollup version
 o Roles installed on server and mailbox counts
 o OS Version and Service Pack

Then, per Database availability group (Exchange 2010/2013/2016):
* Total members per DAG
* Member list
* Databases, detailing:
 o Mailbox Count and Average Size
 o Archive Mailbox Count and Average Size (Only shown if DAG includes Archive Mailboxes)
 o Database Size and whitespace
 o Database and log disk free
 o Last Full Backup (Only shown if one or more DAG database has been backed up)
 o Circular Logging Enabled (Only shown if one or more DAG database has Circular Logging enabled)
 o Mailbox server hosting active copy
 o List of mailbox servers hosting copies and number of copies

Finally, per Database (Non DAG DBs/Exchange 2007/Exchange 2003)
* Databases, detailing:
 o Storage Group (if applicable) and DB name
 o Server hosting database
 o Mailbox Count and Average Size
 o Archive Mailbox Count and Average Size (Only shown if DAG includes Archive Mailboxes)
 o Database Size and whitespace
 o Database and log disk free
 o Last Full Backup (Only shown if one or more DAG database has been backed up)
 o Circular Logging Enabled (Only shown if one or more DAG database has Circular Logging enabled)

This does not detail public folder infrastructure, or examine Exchange 2007/2003 CCR/SCC clusters
(although it attempts to detect Clustered Exchange 2007/2003 servers, signified by ClusMBX).

IMPORTANT NOTE: The script requires WMI and Remote Registry access to Exchange servers from the server
it is run from to determine OS version, Update Rollup, Exchange 2007/2003 cluster and DB size information.

.PARAMETER HTMLReport
  Filename to write HTML Report to

.PARAMETER SendMail
Send Mail after completion. Set to $True to enable. If enabled, -MailFrom, -MailTo, -MailServer are mandatory

.PARAMETER MailFrom
Email address to send from. Passed directly to Send-MailMessage as -From

.PARAMETER MailTo

```
 Email address to send to. Passed directly to Send-MailMessage as -To

 .PARAMETER MailServer
 SMTP Mail server to attempt to send through. Passed directly to Send-MailMessage as -SmtpServer

 .PARAMETER ScheduleAs
 Attempt to schedule the command just executed for 10PM nightly. Specify the username here, schtasks (under the hood) will
ask for a password later.

 .PARAMETER ViewEntireForest
 By default, true. Set the option in Exchange 2007 or 2010 to view all Exchange servers and recipients in the forest.

   .PARAMETER ServerFilter
 Use a text based string to filter Exchange Servers by, e.g. NL-* -  Note the use of the wildcard (*) character to allow for
multiple matches.

 .EXAMPLE
   Generate the HTML report
   .\Get-ExchangeEnvironmentReport.ps1 -HTMLReport .\report.html

   #>

param(
   [parameter(Position=0,Mandatory=$false,ValueFromPipeline=$false,HelpMessage='Filename to write HTML report to')]
[string]$HTMLReport="C:\PS\2017.html",
 [parameter(Position=1,Mandatory=$false,ValueFromPipeline=$false,HelpMessage='Send Mail ($True/$False)')]
[bool]$SendMail=$false,
 [parameter(Position=2,Mandatory=$false,ValueFromPipeline=$false,HelpMessage='Mail From')][string]$MailFrom,
 [parameter(Position=3,Mandatory=$false,ValueFromPipeline=$false,HelpMessage='Mail To')]$MailTo,
 [parameter(Position=4,Mandatory=$false,ValueFromPipeline=$false,HelpMessage='Mail Server')][string]$MailServer,
 [parameter(Position=4,Mandatory=$false,ValueFromPipeline=$false,HelpMessage='Schedule as user')][string]$ScheduleAs,
 [parameter(Position=5,Mandatory=$false,ValueFromPipeline=$false,HelpMessage='Change view to entire forest')]
[bool]$ViewEntireForest=$true,
 [parameter(Position=5,Mandatory=$false,ValueFromPipeline=$false,HelpMessage='Server Name Filter (eg NL-*)')]
[string]$ServerFilter="*"
   )

# Sub-Function to Get Database Information. Shorter than expected..
function _GetDAG
{
 param($DAG)
 @{Name   = $DAG.Name.ToUpper()
  MemberCount = $DAG.Servers.Count
  Members  = [array]($DAG.Servers | % { $_.Name })
  Databases  = @()
  }
}


# Sub-Function to Get Database Information
function _GetDB
{
```

```
param($Database,$ExchangeEnvironment,$Mailboxes,$ArchiveMailboxes,$E2010)

# Circular Logging, Last Full Backup
if ($Database.CircularLoggingEnabled) { $CircularLoggingEnabled="Yes" } else { $CircularLoggingEnabled = "No" }
if ($Database.LastFullBackup) { $LastFullBackup=$Database.LastFullBackup.ToString() } else { $LastFullBackup = "Not
Available" }

# Mailbox Average Sizes
$MailboxStatistics = [array]($ExchangeEnvironment.Servers[$Database.Server.Name].MailboxStatistics | Where {$_.Database -
eq $Database.Identity})
if ($MailboxStatistics)
{
 [long]$MailboxItemSizeB = 0
 $MailboxStatistics | %{ $MailboxItemSizeB+=$_.TotalItemSizeB }
 [long]$MailboxAverageSize = $MailboxItemSizeB / $MailboxStatistics.Count
} else {
 $MailboxAverageSize = 0
}

# Free Disk Space Percentage
if ($ExchangeEnvironment.Servers[$Database.Server.Name].Disks)
{
 foreach ($Disk in $ExchangeEnvironment.Servers[$Database.Server.Name].Disks)
 {
  if ($Database.EdbFilePath.PathName -like "$($Disk.Name)*")
  {
   $FreeDatabaseDiskSpace = $Disk.FreeSpace / $Disk.Capacity * 100
  }
  if ($Database.ExchangeVersion.ExchangeBuild.Major -ge 14)
  {
   if ($Database.LogFolderPath.PathName -like "$($Disk.Name)*")
   {
    $FreeLogDiskSpace = $Disk.FreeSpace / $Disk.Capacity * 100
   }
  } else {
   $StorageGroupDN = $Database.DistinguishedName.Replace("CN=$($Database.Name),","")
   $Adsi=[adsi]"LDAP://$($Database.OriginatingServer)/$($StorageGroupDN)"
   if ($Adsi.msExchESEParamLogFilePath -like "$($Disk.Name)*")
   {
    $FreeLogDiskSpace = $Disk.FreeSpace / $Disk.Capacity * 100
   }
  }
 }
} else {
 $FreeLogDiskSpace=$null
 $FreeDatabaseDiskSpace=$null
}

if ($Database.ExchangeVersion.ExchangeBuild.Major -ge 14 -and $E2010)
{
 # Exchange 2010 Database Only
 $CopyCount = [int]$Database.Servers.Count
```

```
  if ($Database.MasterServerOrAvailabilityGroup.Name -ne $Database.Server.Name)
  {
   $Copies = [array]($Database.Servers | % { $_.Name })
  } else {
   $Copies = @()
  }
  # Archive Info
  $ArchiveMailboxCount = [int]([array]($ArchiveMailboxes | Where {$_.ArchiveDatabase -eq $Database.Name})).Count
  $ArchiveStatistics = [array]($ArchiveMailboxes | Where {$_.ArchiveDatabase -eq $Database.Name} | Get-MailboxStatistics -
Archive )
  if ($ArchiveStatistics)
  {
   [long]$ArchiveItemSizeB = 0
   $ArchiveStatistics | %{ $ArchiveItemSizeB+=$_.TotalItemSize.Value.ToBytes() }
   [long]$ArchiveAverageSize = $ArchiveItemSizeB / $ArchiveStatistics.Count
  } else {
   $ArchiveAverageSize = 0
  }
  # DB Size / Whitespace Info
  [long]$Size = $Database.DatabaseSize.ToBytes()
  [long]$Whitespace = $Database.AvailableNewMailboxSpace.ToBytes()
  $StorageGroup = $null


 } else {
  $ArchiveMailboxCount = 0
  $CopyCount = 0
  $Copies = @()
  # 2003 & 2007, Use WMI (Based on code by Gary Siepser, http://bit.ly/kWWMb3)
  $Size = [long](get-wmiobject cim_datafile -computername $Database.Server.Name -filter ('name=''' +
$Database.edbfilepath.pathname.replace("\","\\") + '''')).filesize

if (!$Size)
  {
   Write-Warning "Cannot detect database size via WMI for $($Database.Server.Name)"
   [long]$Size = 0
   [long]$Whitespace = 0
  } else {
   [long]$MailboxDeletedItemSizeB = 0
   if ($MailboxStatistics)
   {
    $MailboxStatistics | %{ $MailboxDeletedItemSizeB+=$_.TotalDeletedItemSizeB }
   }
   $Whitespace = $Size - $MailboxItemSizeB - $MailboxDeletedItemSizeB
   if ($Whitespace -lt 0) { $Whitespace = 0 }
  }
  $StorageGroup =$Database.DistinguishedName.Split(",")[1].Replace("CN=","")
 }

 @{Name      = $Database.Name
   StorageGroup    = $StorageGroup
   ActiveOwner    = $Database.Server.Name.ToUpper()
```

```
  MailboxCount    = [long]([array]($Mailboxes | Where {$_.Database -eq $Database.Identity})).Count
  MailboxAverageSize  = $MailboxAverageSize
  ArchiveMailboxCount  = $ArchiveMailboxCount
  ArchiveAverageSize  = $ArchiveAverageSize
  CircularLoggingEnabled  = $CircularLoggingEnabled
  LastFullBackup   = $LastFullBackup
  Size      = $Size
  Whitespace    = $Whitespace
  Copies     = $Copies
  CopyCount     = $CopyCount
  FreeLogDiskSpace   = $FreeLogDiskSpace
  FreeDatabaseDiskSpace  = $FreeDatabaseDiskSpace
  }
}


# Sub-Function to get mailbox count per server.
# New in 1.5.2
function _GetExSvrMailboxCount
{
 param($Mailboxes,$ExchangeServer,$Databases)
 # The following *should* work, but it doesn't. Apparently, ServerName is not always returned correctly which may be the
cause of
 # reports of counts being incorrect
 #([array]($Mailboxes | Where {$_.ServerName -eq $ExchangeServer.Name})).Count

 # ..So as a workaround, I'm going to check what databases are assigned to each server and then get the mailbox counts on a
per-
 # database basis and return the resulting total. As we already have this information resident in memory it should be cheap,
just
 # not as quick.
 $MailboxCount = 0
 foreach ($Database in [array]($Databases | Where {$_.Server -eq $ExchangeServer.Name}))
 {
  $MailboxCount+=([array]($Mailboxes | Where {$_.Database -eq $Database.Identity})).Count
 }
 $MailboxCount

}

# Sub-Function to Get Exchange Server information
function _GetExSvr
{
 param($E2010,$ExchangeServer,$Mailboxes,$Databases,$Hybrids)

 # Set Basic Variables
 $MailboxCount = 0
 $RollupLevel = 0
 $RollupVersion = ""
   $ExtNames = @()
   $IntNames = @()
   $CASArrayName = ""
```

```
 # Get WMI Information
 $tWMI = Get-WmiObject Win32_OperatingSystem -ComputerName $ExchangeServer.Name -ErrorAction SilentlyContinue
 if ($tWMI)
 {
  $OSVersion = $tWMI.Caption.Replace("(R)","").Replace("Microsoft
","").Replace("Enterprise","Ent").Replace("Standard","Std").Replace(" Edition","")
  $OSServicePack = $tWMI.CSDVersion
  $RealName = $tWMI.CSName.ToUpper()
 } else {
  Write-Warning "Cannot detect OS information via WMI for $($ExchangeServer.Name)"
  $OSVersion = "N/A"
  $OSServicePack = "N/A"
  $RealName = $ExchangeServer.Name.ToUpper()
 }
 $tWMI=Get-WmiObject -query "Select * from Win32_Volume" -ComputerName $ExchangeServer.Name -ErrorAction
SilentlyContinue
 if ($tWMI)
 {
  $Disks=$tWMI | Select Name,Capacity,FreeSpace | Sort-Object -Property Name
 } else {
  Write-Warning "Cannot detect OS information via WMI for $($ExchangeServer.Name)"
  $Disks=$null
 }

 # Get Exchange Version
 if ($ExchangeServer.AdminDisplayVersion.Major -eq 6)
 {
  $ExchangeMajorVersion =
"$($ExchangeServer.AdminDisplayVersion.Major).$($ExchangeServer.AdminDisplayVersion.Minor)"
  $ExchangeSPLevel = $ExchangeServer.AdminDisplayVersion.FilePatchLevelDescription.Replace("Service Pack ","")
 } elseif ($ExchangeServer.AdminDisplayVersion.Major -eq 15 -and $ExchangeServer.AdminDisplayVersion.Minor -eq 1) {
       $ExchangeMajorVersion =
[double]"$($ExchangeServer.AdminDisplayVersion.Major).$($ExchangeServer.AdminDisplayVersion.Minor)"
       $ExchangeSPLevel = 0
    } else {
  $ExchangeMajorVersion = $ExchangeServer.AdminDisplayVersion.Major
  $ExchangeSPLevel = $ExchangeServer.AdminDisplayVersion.Minor
 }
 # Exchange 2007+
 if ($ExchangeMajorVersion -ge 8)
 {
  # Get Roles
  $MailboxStatistics=$null
     [array]$Roles = $ExchangeServer.ServerRole.ToString().Replace(" ","").Split(",");
       # Add Hybrid "Role" for report
       if ($Hybrids -contains $ExchangeServer.Name)
       {
          $Roles+="Hybrid"
       }
  if ($Roles -contains "Mailbox")
  {
```

```
  $MailboxCount = _GetExSvrMailboxCount -Mailboxes $Mailboxes -ExchangeServer $ExchangeServer -Databases
$Databases
  if ($ExchangeServer.Name.ToUpper() -ne $RealName)
  {
   $Roles = [array]($Roles | Where {$_ -ne "Mailbox"})
   $Roles += "ClusteredMailbox"
  }
  # Get Mailbox Statistics the normal way, return in a consitent format
  $MailboxStatistics = Get-MailboxStatistics -Server $ExchangeServer | Select
DisplayName,@{Name="TotalItemSizeB";Expression=
{$_.TotalItemSize.Value.ToBytes()}},@{Name="TotalDeletedItemSizeB";Expression=
{$_.TotalDeletedItemSize.Value.ToBytes()}},Database
    }
      # Get HTTPS Names (Exchange 2010 only due to time taken to retrieve data)
      if ($Roles -contains "ClientAccess" -and $E2010)
      {

        Get-OWAVirtualDirectory -Server $ExchangeServer -ADPropertiesOnly | %{ $ExtNames+=$_.ExternalURL.Host;
$IntNames+=$_.InternalURL.Host; }
        Get-WebServicesVirtualDirectory -Server $ExchangeServer -ADPropertiesOnly | %{ $ExtNames+=$_.ExternalURL.Host;
$IntNames+=$_.InternalURL.Host; }
        Get-OABVirtualDirectory -Server $ExchangeServer -ADPropertiesOnly | %{ $ExtNames+=$_.ExternalURL.Host;
$IntNames+=$_.InternalURL.Host; }
        Get-ActiveSyncVirtualDirectory -Server $ExchangeServer -ADPropertiesOnly | %{ $ExtNames+=$_.ExternalURL.Host;
$IntNames+=$_.InternalURL.Host; }
        if (Get-Command Get-MAPIVirtualDirectory -ErrorAction SilentlyContinue)
        {
          Get-MAPIVirtualDirectory -Server $ExchangeServer -ADPropertiesOnly | %{ $ExtNames+=$_.ExternalURL.Host;
$IntNames+=$_.InternalURL.Host; }
        }
        if (Get-Command Get-ClientAccessService -ErrorAction SilentlyContinue)
        {
          $IntNames+=(Get-ClientAccessService -Identity $ExchangeServer.Name).AutoDiscoverServiceInternalURI.Host
        } else {
          $IntNames+=(Get-ClientAccessServer -Identity $ExchangeServer.Name).AutoDiscoverServiceInternalURI.Host
        }

        if ($ExchangeMajorVersion -ge 14)
        {
          Get-ECPVirtualDirectory -Server $ExchangeServer -ADPropertiesOnly | %{ $ExtNames+=$_.ExternalURL.Host;
$IntNames+=$_.InternalURL.Host; }
        }
        $IntNames = $IntNames|Sort-Object -Unique
        $ExtNames = $ExtNames|Sort-Object -Unique
        $CASArray = Get-ClientAccessArray -Site $ExchangeServer.Site.Name
        if ($CASArray)
        {
          $CASArrayName = $CASArray.Fqdn
        }
      }

  # Rollup Level / Versions (Thanks to Bhargav Shukla http://bit.ly/msxGIJ)
```

```
 if ($ExchangeMajorVersion -ge 14) {
        $RegKey="SOFTWARE\\Microsoft\\Windows\\CurrentVersion\\Installer\\UserData\\S-1-5-
18\\Products\\AE1D439464EB1B8488741FFA028E291C\\Patches"
      } else {
  $RegKey="SOFTWARE\\Microsoft\\Windows\\CurrentVersion\\Installer\\UserData\\S-1-5-
18\\Products\\461C2B4266EDEF444B864AD6D9E5B613\\Patches"
 }
 $RemoteRegistry = [Microsoft.Win32.RegistryKey]::OpenRemoteBaseKey('LocalMachine', $ExchangeServer.Name);
 if ($RemoteRegistry)
 {
  $RUKeys = $RemoteRegistry.OpenSubKey($RegKey).GetSubKeyNames() | ForEach {"$RegKey\\$_"}
  if ($RUKeys)
  {
   [array]($RUKeys | %{$RemoteRegistry.OpenSubKey($_).getvalue("DisplayName")}) | %{
    if ($_ -like "Update Rollup *")
    {
     $tRU = $_.Split(" ")[2]
     if ($tRU -like "*-*") { $tRUV=$tRU.Split("-")[1]; $tRU=$tRU.Split("-")[0] } else { $tRUV="" }
     if ([int]$tRU -ge [int]$RollupLevel) { $RollupLevel=$tRU; $RollupVersion=$tRUV }
    }
   }
  }
      } else {
  Write-Warning "Cannot detect Rollup Version via Remote Registry for $($ExchangeServer.Name)"
 }
      # Exchange 2013 CU or SP Level
      if ($ExchangeMajorVersion -ge 15)
 {
  $RegKey="SOFTWARE\\Microsoft\\Windows\\CurrentVersion\\Uninstall\\Microsoft Exchange v15"
    $RemoteRegistry = [Microsoft.Win32.RegistryKey]::OpenRemoteBaseKey('LocalMachine', $ExchangeServer.Name);
    if ($RemoteRegistry)
    {
     $ExchangeSPLevel = $RemoteRegistry.OpenSubKey($RegKey).getvalue("DisplayName")
           if ($ExchangeSPLevel -like "*Service Pack*" -or $ExchangeSPLevel -like "*Cumulative Update*")
           {
        $ExchangeSPLevel = $ExchangeSPLevel.Replace("Microsoft Exchange Server 2013 ","");
              $ExchangeSPLevel = $ExchangeSPLevel.Replace("Microsoft Exchange Server 2016 ","");
              $ExchangeSPLevel = $ExchangeSPLevel.Replace("Service Pack ","SP");
              $ExchangeSPLevel = $ExchangeSPLevel.Replace("Cumulative Update ","CU");
           } else {
              $ExchangeSPLevel = 0;
           }
        } else {
     Write-Warning "Cannot detect CU/SP via Remote Registry for $($ExchangeServer.Name)"
    }
      }

}
# Exchange 2003
if ($ExchangeMajorVersion -eq 6.5)
{
 # Mailbox Count
```

```
 $MailboxCount = _GetExSvrMailboxCount -Mailboxes $Mailboxes -ExchangeServer $ExchangeServer -Databases $Databases
 # Get Role via WMI
 $tWMI = Get-WMIObject Exchange_Server -Namespace "root\microsoftexchangev2" -Computername
$ExchangeServer.Name -Filter "Name='$($ExchangeServer.Name)'"
 if ($tWMI)
 {
  if ($tWMI.IsFrontEndServer) { $Roles=@("FE") } else { $Roles=@("BE") }
 } else {
  Write-Warning "Cannot detect Front End/Back End Server information via WMI for $($ExchangeServer.Name)"
  $Roles+="Unknown"
 }
 # Get Mailbox Statistics using WMI, return in a consistent format
 $tWMI = Get-WMIObject -class Exchange_Mailbox -Namespace ROOT\MicrosoftExchangev2 -ComputerName
$ExchangeServer.Name -Filter ("ServerName='$($ExchangeServer.Name)'")
 if ($tWMI)
 {
  $MailboxStatistics = $tWMI | Select @{Name="DisplayName";Expression=
{$_.MailboxDisplayName}},@{Name="TotalItemSizeB";Expression={$_.Size}},@{Name="TotalDeletedItemSizeB";Expression=
{$_.DeletedMessageSizeExtended }},@{Name="Database";Expression={((get-mailboxdatabase -Identity
"$($_.ServerName)\$($_.StorageGroupName)\$($_.StoreName)").identity)}}
 } else {
  Write-Warning "Cannot retrieve Mailbox Statistics via WMI for $($ExchangeServer.Name)"
  $MailboxStatistics = $null
 }
}
# Exchange 2000
if ($ExchangeMajorVersion -eq "6.0")
{
 # Mailbox Count
 $MailboxCount = _GetExSvrMailboxCount -Mailboxes $Mailboxes -ExchangeServer $ExchangeServer -Databases $Databases
 # Get Role via ADSI
 $tADSI=[ADSI]"LDAP://$($ExchangeServer.OriginatingServer)/$($ExchangeServer.DistinguishedName)"
 if ($tADSI)
 {
  if ($tADSI.ServerRole -eq 1) { $Roles=@("FE") } else { $Roles=@("BE") }
 } else {
  Write-Warning "Cannot detect Front End/Back End Server information via ADSI for $($ExchangeServer.Name)"
  $Roles+="Unknown"
 }
 $MailboxStatistics = $null
}

# Return Hashtable
@{Name     = $ExchangeServer.Name.ToUpper()
 RealName    = $RealName
 ExchangeMajorVersion  = $ExchangeMajorVersion
 ExchangeSPLevel  = $ExchangeSPLevel
 Edition    = $ExchangeServer.Edition
 Mailboxes    = $MailboxCount
 OSVersion    = $OSVersion;
 OSServicePack   = $OSServicePack
 Roles     = $Roles
```

```
  RollupLevel   = $RollupLevel
  RollupVersion   = $RollupVersion
  Site     = $ExchangeServer.Site.Name
  MailboxStatistics  = $MailboxStatistics
  Disks     = $Disks
     IntNames    = $IntNames
     ExtNames    = $ExtNames
     CASArrayName   = $CASArrayName
 }
}

# Sub Function to Get Totals by Version
function _TotalsByVersion
{
 param($ExchangeEnvironment)
 $TotalMailboxesByVersion=@{}
 if ($ExchangeEnvironment.Sites)
 {
  foreach ($Site in $ExchangeEnvironment.Sites.GetEnumerator())
  {
   foreach ($Server in $Site.Value)
   {
    if (!$TotalMailboxesByVersion["$($Server.ExchangeMajorVersion).$($Server.ExchangeSPLevel)"])
    {

$TotalMailboxesByVersion.Add("$($Server.ExchangeMajorVersion).$($Server.ExchangeSPLevel)",@{ServerCount=1;MailboxCo
unt=$Server.Mailboxes})
    } else {
     $TotalMailboxesByVersion["$($Server.ExchangeMajorVersion).$($Server.ExchangeSPLevel)"].ServerCount++

$TotalMailboxesByVersion["$($Server.ExchangeMajorVersion).$($Server.ExchangeSPLevel)"].MailboxCount+=$Server.Mailbox
es
    }
   }
  }
 }
 if ($ExchangeEnvironment.Pre2007)
 {
  foreach ($FakeSite in $ExchangeEnvironment.Pre2007.GetEnumerator())
  {
   foreach ($Server in $FakeSite.Value)
   {
    if (!$TotalMailboxesByVersion["$($Server.ExchangeMajorVersion).$($Server.ExchangeSPLevel)"])
    {

$TotalMailboxesByVersion.Add("$($Server.ExchangeMajorVersion).$($Server.ExchangeSPLevel)",@{ServerCount=1;MailboxCo
unt=$Server.Mailboxes})
    } else {
     $TotalMailboxesByVersion["$($Server.ExchangeMajorVersion).$($Server.ExchangeSPLevel)"].ServerCount++

$TotalMailboxesByVersion["$($Server.ExchangeMajorVersion).$($Server.ExchangeSPLevel)"].MailboxCount+=$Server.Mailbox
es
```

```
   }
  }
 }
}
 $TotalMailboxesByVersion
}

# Sub Function to Get Totals by Role
function _TotalsByRole
{
 param($ExchangeEnvironment)
 # Add Roles We Always Show
 $TotalServersByRole=@{"ClientAccess"   = 0
       "HubTransport"   = 0
       "UnifiedMessaging" = 0
       "Mailbox"    = 0
       "Edge"     = 0
       }
 if ($ExchangeEnvironment.Sites)
 {
  foreach ($Site in $ExchangeEnvironment.Sites.GetEnumerator())
  {
   foreach ($Server in $Site.Value)
   {
    foreach ($Role in $Server.Roles)
    {
     if ($TotalServersByRole[$Role] -eq $null)
     {
      $TotalServersByRole.Add($Role,1)
     } else {
      $TotalServersByRole[$Role]++
     }
    }
   }
  }
 }
 if ($ExchangeEnvironment.Pre2007["Pre 2007 Servers"])
 {

  foreach ($Server in $ExchangeEnvironment.Pre2007["Pre 2007 Servers"])
  {

   foreach ($Role in $Server.Roles)
   {
    if ($TotalServersByRole[$Role] -eq $null)
    {
     $TotalServersByRole.Add($Role,1)
    } else {
     $TotalServersByRole[$Role]++
    }
   }
  }
```

```
 }
 $TotalServersByRole
}

# Sub Function to return HTML Table for Sites/Pre 2007
function _GetOverview
{
 param($Servers,$ExchangeEnvironment,$ExRoleStrings,$Pre2007=$False)
 if ($Pre2007)
 {
  $BGColHeader="#880099"
  $BGColSubHeader="#8800CC"
  $Prefix=""
      $IntNamesText=""
      $ExtNamesText=""
      $CASArrayText=""
 } else {
  $BGColHeader="#000099"
  $BGColSubHeader="#0000FF"
  $Prefix="Site:"
      $IntNamesText=""
      $ExtNamesText=""
      $CASArrayText=""
      $IntNames=@()
      $ExtNames=@()
      $CASArrayName=""
      foreach ($Server in $Servers.Value)
      {
         $IntNames+=$Server.IntNames
         $ExtNames+=$Server.ExtNames
         $CASArrayName=$Server.CASArrayName

      }
      $IntNames = $IntNames|Sort -Unique
      $ExtNames = $ExtNames|Sort -Unique
      $IntNames = [system.String]::Join(",",$IntNames)
      $ExtNames = [system.String]::Join(",",$ExtNames)
      if ($IntNames)
      {
         $IntNamesText="Internal Names: $($IntNames)"
         $ExtNamesText="External Names: $($ExtNames)<br >"
      }
      if ($CASArrayName)
      {
         $CASArrayText="CAS Array: $($CASArrayName)"
      }
 }
 $Output="<table border=""0"" cellpadding=""3"" width=""100%"" style=""font-size:8pt;font-family:Segoe UI,Arial,sans-
serif"">
 <col width=""20%""><col width=""20%"">
 <colgroup width=""25%"">";
```

```
 $ExchangeEnvironment.TotalServersByRole.GetEnumerator()|Sort Name| %{$Output+="<col width=""3%"">"}
 $Output+="</colgroup><col width=""20%""><col  width=""20%"">
 <tr bgcolor=""$($BGColHeader)""><th><font color=""#ffffff"">$($Prefix) $($Servers.Key)</font></th>
 <th colspan=""$(($ExchangeEnvironment.TotalServersByRole.Count)+2)"" align=""left""><font
color=""#ffffff"">$($ExtNamesText)$($IntNamesText)</font></th>
 <th align=""center""><font color=""#ffffff"">$($CASArrayText)</font></th></tr>"
 $TotalMailboxes=0
 $Servers.Value | %{$TotalMailboxes += $_.Mailboxes}
 $Output+="<tr bgcolor=""$($BGColSubHeader)""><th><font color=""#ffffff"">Mailboxes: $($TotalMailboxes)</font></th>
<th>"
    $Output+="<font color=""#ffffff"">Exchange Version</font></th>"
 $ExchangeEnvironment.TotalServersByRole.GetEnumerator()|Sort Name| %{$Output+="<th><font
color=""#ffffff"">$($ExRoleStrings[$_.Key].Short)</font></th>"}
 $Output+="<th><font color=""#ffffff"">OS Version</font></th><th><font color=""#ffffff"">OS Service Pack</font></th>
</tr>"
 $AlternateRow=0

 foreach ($Server in $Servers.Value)
 {
  $Output+="<tr "
  if ($AlternateRow)
  {
   $Output+=" style=""background-color:#dddddd"""
   $AlternateRow=0
  } else
  {
   $AlternateRow=1
  }
  $Output+="><td>$($Server.Name)"
  if ($Server.RealName -ne $Server.Name)
  {
   $Output+=" ($($Server.RealName))"
  }
  $Output+="</td><td>$($ExVersionStrings["$($Server.ExchangeMajorVersion).$($Server.ExchangeSPLevel)"].Long)"
  if ($Server.RollupLevel -gt 0)
  {
   $Output+=" UR$($Server.RollupLevel)"
   if ($Server.RollupVersion)
   {
    $Output+=" $($Server.RollupVersion)"
   }
  }
  $Output+="</td>"
  $ExchangeEnvironment.TotalServersByRole.GetEnumerator()|Sort Name| %{
   $Output+="<td"
   if ($Server.Roles -contains $_.Key)
   {
    $Output+=" align=""center"" style=""background-color:#00FF00"""
   }
   $Output+=">"
   if (($_.Key -eq "ClusteredMailbox" -or $_.Key -eq "Mailbox" -or $_.Key -eq "BE") -and $Server.Roles -contains $_.Key)
   {
```

```
    $Output+=$Server.Mailboxes
   }
  }

  $Output+="<td>$($Server.OSVersion)</td><td>$($Server.OSServicePack)</td></tr>";
 }
 $Output+="<tr></tr>
 </table><br />"
 $Output
}

# Sub Function to return HTML Table for Databases
function _GetDBTable
{

 param($Databases)
 # Only Show Archive Mailbox Columns, Backup Columns and Circ Logging if at least one DB has an Archive mailbox, backed
up or Cir Log enabled.
 $ShowArchiveDBs=$False
 $ShowLastFullBackup=$False
 $ShowCircularLogging=$False
 $ShowStorageGroups=$False
 $ShowCopies=$False
 $ShowFreeDatabaseSpace=$False
 $ShowFreeLogDiskSpace=$False
 foreach ($Database in $Databases)
 {
  if ($Database.ArchiveMailboxCount -gt 0)
  {
   $ShowArchiveDBs=$True
  }
  if ($Database.LastFullBackup -ne "Not Available")
  {
   $ShowLastFullBackup=$True
  }
  if ($Database.CircularLoggingEnabled -eq "Yes")
  {
   $ShowCircularLogging=$True
  }
  if ($Database.StorageGroup)
  {
   $ShowStorageGroups=$True
  }
  if ($Database.CopyCount -gt 0)
  {
   $ShowCopies=$True
  }
  if ($Database.FreeDatabaseDiskSpace -ne $null)
  {
   $ShowFreeDatabaseSpace=$true
  }
  if ($Database.FreeLogDiskSpace -ne $null)
```

```
 {
  $ShowFreeLogDiskSpace=$true
 }

}


$Output="<table border=""0"" cellpadding=""3"" width=""100%"" style=""font-size:8pt;font-family:Segoe UI,Arial,sans-serif"">

<tr align=""center"" bgcolor=""#FFD700"">

<th>Server</th>"

if ($ShowStorageGroups)
{
 $Output+="<th>Storage Group</th>"
}
$Output+="<th>Database Name</th>
<th>Mailboxes</th>
<th>Av. Mailbox Size</th>"
if ($ShowArchiveDBs)
{
 $Output+="<th>Archive MBs</th><th>Av. Archive Size</th>"
}
$Output+="<th>DB Size</th><th>DB Whitespace</th>"
if ($ShowFreeDatabaseSpace)
{
 $Output+="<th>Database Disk Free</th>"
}
if ($ShowFreeLogDiskSpace)
{
 $Output+="<th>Log Disk Free</th>"
}
if ($ShowLastFullBackup)
{
 $Output+="<th>Last Full Backup</th>"
}
if ($ShowCircularLogging)
{
 $Output+="<th>Circular Logging</th>"
}
if ($ShowCopies)
{
 $Output+="<th>Copies (n)</th>"
}

$Output+="</tr>"
$AlternateRow=0;
foreach ($Database in $Databases)
{
 $Output+="<tr"
```

```
if ($AlternateRow)
{
 $Output+=" style=""background-color:#dddddd"""
 $AlternateRow=0

        if($Database.Size/1GB -gt 2000)

        {
        $Output+=" style=""background-color:#FF0000"""
 $AlternateRow=0
        }
} else
{
 $AlternateRow=1
}

$Output+="><td>$($Database.ActiveOwner)</td>"
if ($ShowStorageGroups)
{
 $Output+="<td>$($Database.StorageGroup)</td>"
}
$Output+="<td>$($Database.Name)</td>
<td align=""center"">$($Database.MailboxCount)</td>
<td align=""center"">$("{0:N2}" -f ($Database.MailboxAverageSize/1MB)) MB</td>"
if ($ShowArchiveDBs)
{
 $Output+="<td align=""center"">$($Database.ArchiveMailboxCount)</td>
 <td align=""center"">$("{0:N2}" -f ($Database.ArchiveAverageSize/1MB)) MB</td>";
}

$Output+="<td align=""center"">$("{0:N2}" -f ($Database.Size/1GB)) GB </td>
<td align=""center"">$("{0:N2}" -f ($Database.Whitespace/1GB)) GB</td>";

if ($ShowFreeDatabaseSpace)
{
 $Output+="<td align=""center"">$("{0:N1}" -f $Database.FreeDatabaseDiskSpace)%</td>"
}
if ($ShowFreeLogDiskSpace)
{
 $Output+="<td align=""center"">$("{0:N1}" -f $Database.FreeLogDiskSpace)%</td>"
}
if ($ShowLastFullBackup)
{
 $Output+="<td align=""center"">$($Database.LastFullBackup)</td>";
}
if ($ShowCircularLogging)
{
 $Output+="<td align=""center"">$($Database.CircularLoggingEnabled)</td>";
}
if ($ShowCopies)
{
 $Output+="<td>$($Database.Copies|%{$_}) ($($Database.CopyCount))</td>"
```

```
  }
  $Output+="</tr>";
 }
 $Output+="</table><br />"

 $Output
}


# Sub Function to neatly update progress
function _UpProg1
{
 param($PercentComplete,$Status,$Stage)
 $TotalStages=5
 Write-Progress -id 1 -activity "Get-ExchangeEnvironmentReport" -status $Status -percentComplete
(($PercentComplete/$TotalStages)+(1/$TotalStages*$Stage*100))
}

# 1. Initial Startup

# 1.0 Check Powershell Version
if ((Get-Host).Version.Major -eq 1)
{
 throw "Powershell Version 1 not supported";
}

# 1.1 Check Exchange Management Shell, attempt to load
if (!(Get-Command Get-ExchangeServer -ErrorAction SilentlyContinue))
{
 if (Test-Path "C:\Program Files\Microsoft\Exchange Server\V14\bin\RemoteExchange.ps1")
 {
  . 'C:\Program Files\Microsoft\Exchange Server\V14\bin\RemoteExchange.ps1'
  Connect-ExchangeServer -auto
 } elseif (Test-Path "C:\Program Files\Microsoft\Exchange Server\bin\Exchange.ps1") {
  Add-PSSnapIn Microsoft.Exchange.Management.PowerShell.Admin
  .'C:\Program Files\Microsoft\Exchange Server\bin\Exchange.ps1'
 } else {
  throw "Exchange Management Shell cannot be loaded"
 }
}

# 1.2 Check if -SendMail parameter set and if so check -MailFrom, -MailTo and -MailServer are set
if ($SendMail)
{
 if (!$MailFrom -or !$MailTo -or !$MailServer)
 {
  throw "If -SendMail specified, you must also specify -MailFrom, -MailTo and -MailServer"
 }
}

# 1.3 Check Exchange Management Shell Version
if ((Get-PSSnapin -Name Microsoft.Exchange.Management.PowerShell.Admin -ErrorAction SilentlyContinue))
```

```
{
 $E2010 = $false;
 if (Get-ExchangeServer | Where {$_.AdminDisplayVersion.Major -gt 14})
 {
  Write-Warning "Exchange 2010 or higher detected. You'll get better results if you run this script from the latest management
shell"
 }
}else{

   $E2010 = $true
   $localserver = get-exchangeserver $Env:computername
   $localversion = $localserver.admindisplayversion.major
   if ($localversion -eq 15) { $E2013 = $true }

}

# 1.4 Check view entire forest if set (by default, true)
if ($E2010)
{
 Set-ADServerSettings -ViewEntireForest:$ViewEntireForest
} else {
 $global:AdminSessionADSettings.ViewEntireForest = $ViewEntireForest
}

# 1.5 Initial Variables

# 1.5.1 Hashtable to update with environment data
$ExchangeEnvironment = @{Sites     = @{}
      Pre2007    = @{}
      Servers    = @{}
      DAGs     = @()
      NonDAGDatabases  = @()
     }
# 1.5.7 Exchange Major Version String Mapping
$ExMajorVersionStrings = @{"6.0" = @{Long="Exchange 2000";Short="E2000"}
          "6.5" = @{Long="Exchange 2003";Short="E2003"}
          "8"   = @{Long="Exchange 2007";Short="E2007"}
                    "14"  = @{Long="Exchange 2010";Short="E2010"}
        "15"  = @{Long="Exchange 2013";Short="E2013"}
                    "15.1"  = @{Long="Exchange 2016";Short="E2016"}}
# 1.5.8 Exchange Service Pack String Mapping
$ExSPLevelStrings = @{"0" = "RTM"
      "1" = "SP1"
        "2" = "SP2"
          "3" = "SP3"
        "4" = "SP4"
                "SP1" = "SP1"
                "SP2" = "SP2"}
   # Add many CUs
   for ($i = 1; $i -le 20; $i++)
   {
      $ExSPLevelStrings.Add("CU$($i)","CU$($i)");
```

```
   }
# 1.5.9 Populate Full Mapping using above info
$ExVersionStrings = @{}
foreach ($Major in $ExMajorVersionStrings.GetEnumerator())
{
 foreach ($Minor in $ExSPLevelStrings.GetEnumerator())
 {
  $ExVersionStrings.Add("$($Major.Key).$($Minor.Key)",@{Long="$($Major.Value.Long)
$($Minor.Value)";Short="$($Major.Value.Short)$($Minor.Value)"})
 }
}
# 1.5.10 Exchange Role String Mapping
$ExRoleStrings = @{"ClusteredMailbox" = @{Short="ClusMBX";Long="CCR/SCC Clustered Mailbox"}
      "Mailbox"    = @{Short="MBX";Long="Mailbox"}
      "ClientAccess"   = @{Short="CAS";Long="Client Access"}
      "HubTransport"   = @{Short="HUB";Long="Hub Transport"}
      "UnifiedMessaging" = @{Short="UM";Long="Unified Messaging"}
      "Edge"     = @{Short="EDGE";Long="Edge Transport"}
      "FE"     = @{Short="FE";Long="Front End"}
      "BE"     = @{Short="BE";Long="Back End"}
            "Hybrid"       = @{Short="HYB"; Long="Hybrid"}
      "Unknown"   = @{Short="Unknown";Long="Unknown"}}

# 2 Get Relevant Exchange Information Up-Front

# 2.1 Get Server, Exchange and Mailbox Information
_UpProg1 1 "Getting Exchange Server List" 1
$ExchangeServers = [array](Get-ExchangeServer $ServerFilter)
if (!$ExchangeServers)
{
 throw "No Exchange Servers matched by -ServerFilter ""$($ServerFilter)"""
}
$HybridServers=@()
if (Get-Command Get-HybridConfiguration -ErrorAction SilentlyContinue)
{
   $HybridConfig = Get-HybridConfiguration
   $HybridConfig.ReceivingTransportServers|%{ $HybridServers+=$_.Name  }
   $HybridConfig.SendingTransportServers|%{ $HybridServers+=$_.Name  }
   $HybridServers =  $HybridServers | Sort-Object -Unique
}

_UpProg1 10 "Getting Mailboxes" 1
$Mailboxes = [array](Get-Mailbox -ResultSize Unlimited) | Where {$_.Server -like $ServerFilter}
if ($E2010)
{
 _UpProg1 60 "Getting Archive Mailboxes" 1
 $ArchiveMailboxes = [array](Get-Mailbox -Archive -ResultSize Unlimited) | Where {$_.Server -like $ServerFilter}
   _UpProg1 70 "Getting Remote Mailboxes" 1
   $RemoteMailboxes = [array](Get-RemoteMailbox  -ResultSize Unlimited)
   $ExchangeEnvironment.Add("RemoteMailboxes",$RemoteMailboxes.Count)
 _UpProg1 90 "Getting Databases" 1
   if ($E2013)
```

```
   {
      $Databases = [array](Get-MailboxDatabase -IncludePreExchange2013 -Status)  | Where {$_.Server -like $ServerFilter}
   }
   elseif ($E2010)
   {
      $Databases = [array](Get-MailboxDatabase -IncludePreExchange2010 -Status)  | Where {$_.Server -like $ServerFilter}
   }
 $DAGs = [array](Get-DatabaseAvailabilityGroup) | Where {$_.Servers -like $ServerFilter}
} else {
 $ArchiveMailboxes = $null
 $ArchiveMailboxStats = $null
 $DAGs = $null
 _UpProg1 90 "Getting Databases" 1
 $Databases = [array](Get-MailboxDatabase -IncludePreExchange2007 -Status) | Where {$_.Server -like $ServerFilter}
   $ExchangeEnvironment.Add("RemoteMailboxes",0)
}

# 2.3 Populate Information we know
$ExchangeEnvironment.Add("TotalMailboxes",$Mailboxes.Count + $ExchangeEnvironment.RemoteMailboxes);

# 3 Process High-Level Exchange Information

# 3.1 Collect Exchange Server Information
for ($i=0; $i -lt $ExchangeServers.Count; $i++)
{
 _UpProg1 ($i/$ExchangeServers.Count*100) "Getting Exchange Server Information" 2
 # Get Exchange Info
 $ExSvr = _GetExSvr -E2010 $E2010 -ExchangeServer $ExchangeServers[$i] -Mailboxes $Mailboxes -Databases $Databases -
Hybrids $HybridServers
 # Add to site or pre-Exchange 2007 list
 if ($ExSvr.Site)
 {
  # Exchange 2007 or higher
  if (!$ExchangeEnvironment.Sites[$ExSvr.Site])
  {
   $ExchangeEnvironment.Sites.Add($ExSvr.Site,@($ExSvr))
  } else {
   $ExchangeEnvironment.Sites[$ExSvr.Site]+=$ExSvr
  }
 } else {
  # Exchange 2003 or lower
  if (!$ExchangeEnvironment.Pre2007["Pre 2007 Servers"])
  {
   $ExchangeEnvironment.Pre2007.Add("Pre 2007 Servers",@($ExSvr))
  } else {
   $ExchangeEnvironment.Pre2007["Pre 2007 Servers"]+=$ExSvr
  }
 }
 # Add to Servers List
 $ExchangeEnvironment.Servers.Add($ExSvr.Name,$ExSvr)
}
```

```
# 3.2 Calculate Environment Totals for Version/Role using collected data
_UpProg1 1 "Getting Totals" 3
$ExchangeEnvironment.Add("TotalMailboxesByVersion",(_TotalsByVersion -ExchangeEnvironment $ExchangeEnvironment))
$ExchangeEnvironment.Add("TotalServersByRole",(_TotalsByRole -ExchangeEnvironment $ExchangeEnvironment))

# 3.4 Populate Environment DAGs
_UpProg1 5 "Getting DAG Info" 3
if ($DAGs)
{
 foreach($DAG in $DAGs)
 {
  $ExchangeEnvironment.DAGs+=(_GetDAG -DAG $DAG)
 }
}

# 3.5 Get Database information
_UpProg1 60 "Getting Database Info" 3
for ($i=0; $i -lt $Databases.Count; $i++)
{
 $Database = _GetDB -Database $Databases[$i] -ExchangeEnvironment $ExchangeEnvironment -Mailboxes $Mailboxes -
ArchiveMailboxes $ArchiveMailboxes -E2010 $E2010
 $DAGDB = $false
 for ($j=0; $j -lt $ExchangeEnvironment.DAGs.Count; $j++)
 {
  if ($ExchangeEnvironment.DAGs[$j].Members -contains $Database.ActiveOwner)
  {
   $DAGDB=$true
   $ExchangeEnvironment.DAGs[$j].Databases += $Database
  }
 }
 if (!$DAGDB)
 {
  $ExchangeEnvironment.NonDAGDatabases += $Database
 }


}

# 4 Write Information
_UpProg1 5 "Writing HTML Report Header" 4
# Header
$Output="<html>
<body>
<font size=""1"" face=""Segoe UI,Arial,sans-serif"">
<h2 align=""center"">[每月巡检]邮件系统环境检查报告</h3>
<h3 align=""center"" bgcolor=""#FF0000"">阅读须知：请重点关注被标记为深红色的行，深红色的行代表数据库占用空间已超过
2TB，需要优先做数据迁移。</h4>
<h4 align=""center"">生成时间 $((Get-Date).ToString())</h5>
</font>
<table border=""0"" cellpadding=""3"" style=""font-size:8pt;font-family:Segoe UI,Arial,sans-serif"">
<tr bgcolor=""#009900"">
<th colspan=""$($ExchangeEnvironment.TotalMailboxesByVersion.Count)""><font color=""#ffffff"">Total Servers:</font>
```

```
</th>"
if ($ExchangeEnvironment.RemoteMailboxes)
   {
   $Output+="<th colspan=""$($ExchangeEnvironment.TotalMailboxesByVersion.Count+2)""><font color=""#ffffff"">Total
Mailboxes:</font></th>"
   } else {
   $Output+="<th colspan=""$($ExchangeEnvironment.TotalMailboxesByVersion.Count+1)""><font color=""#ffffff"">Total
Mailboxes:</font></th>"
   }
$Output+="<th colspan=""$($ExchangeEnvironment.TotalServersByRole.Count)""><font color=""#ffffff"">Total Roles:
</font></th></tr>
<tr bgcolor=""#00CC00"">"
# Show Column Headings based on the Exchange versions we have
$ExchangeEnvironment.TotalMailboxesByVersion.GetEnumerator()|Sort Name| %{$Output+="
<th>$($ExVersionStrings[$_.Key].Short)</th>"}
$ExchangeEnvironment.TotalMailboxesByVersion.GetEnumerator()|Sort Name| %{$Output+="
<th>$($ExVersionStrings[$_.Key].Short)</th>"}
if ($ExchangeEnvironment.RemoteMailboxes)
{
   $Output+="<th>Office 365</th>"
}
$Output+="<th>Org</th>"
$ExchangeEnvironment.TotalServersByRole.GetEnumerator()|Sort Name| %{$Output+="<th>$($ExRoleStrings[$_.Key].Short)
</th>"}
$Output+="<tr>"
$Output+="<tr align=""center"" bgcolor=""#dddddd"">"
$ExchangeEnvironment.TotalMailboxesByVersion.GetEnumerator()|Sort Name| %{$Output+="<td>$($_.Value.ServerCount)
</td>" }
$ExchangeEnvironment.TotalMailboxesByVersion.GetEnumerator()|Sort Name| %{$Output+="<td>$($_.Value.MailboxCount)
</td>" }
if ($RemoteMailboxes)
{
   $Output+="<th>$($ExchangeEnvironment.RemoteMailboxes)</th>"
}
$Output+="<td>$($ExchangeEnvironment.TotalMailboxes)</td>"
$ExchangeEnvironment.TotalServersByRole.GetEnumerator()|Sort Name| %{$Output+="<td>$($_.Value)</td>"}
$Output+="</tr><tr><tr></table><br>"

# Sites and Servers
_UpProg1 20 "Writing HTML Site Information" 4
foreach ($Site in $ExchangeEnvironment.Sites.GetEnumerator())
{
 $Output+=_GetOverview -Servers $Site -ExchangeEnvironment $ExchangeEnvironment -ExRoleStrings $ExRoleStrings
}
_UpProg1 40 "Writing HTML Pre-2007 Information" 4
foreach ($FakeSite in $ExchangeEnvironment.Pre2007.GetEnumerator())
{
 $Output+=_GetOverview -Servers $FakeSite -ExchangeEnvironment $ExchangeEnvironment -ExRoleStrings $ExRoleStrings -
Pre2007:$true
}

_UpProg1 60 "Writing HTML DAG Information" 4
```

```
foreach ($DAG in $ExchangeEnvironment.DAGs)
{
 if ($DAG.MemberCount -gt 0)
 {
  # Database Availability Group Header
  $Output+="<table border=""0"" cellpadding=""3"" width=""100%"" style=""font-size:8pt;font-family:Segoe UI,Arial,sans-serif"">
  <col width=""20%""><col width=""10%""><col width=""70%"">
  <tr align=""center"" bgcolor=""#FF8000 ""><th>Database Availability Group Name</th><th>Member Count</th>
  <th>Database Availability Group Members</th></tr>
  <tr><td>$($DAG.Name)</td><td align=""center"">
  $($DAG.MemberCount)</td><td>"
  $DAG.Members | %{ $Output+="$($_) " }
  $Output+="</td></tr></table>"

  # Get Table HTML
  $Output+=_GetDBTable -Databases $DAG.Databases
 }

}

if ($ExchangeEnvironment.NonDAGDatabases.Count)
{
 _UpProg1 80 "Writing HTML Non-DAG Database Information" 4
 $Output+="<table border=""0"" cellpadding=""3"" width=""100%"" style=""font-size:8pt;font-family:Segoe UI,Arial,sans-serif"">
      <tr bgcolor=""#FF8000""><th>Mailbox Databases (Non-DAG)</th></table>"
 $Output+=_GetDBTable -Databases $ExchangeEnvironment.NonDAGDatabases
}


# End
_UpProg1 90 "Finishing off.." 4
$Output+="</body></html>";
$Output | Out-File $HTMLReport


<#if ($SendMail)
{
 _UpProg1 95 "Sending mail message.." 4
 Send-MailMessage -Attachments $HTMLReport -To $MailTo -From $MailFrom -Subject "[每月巡检]邮件系统环境检查报告" -BodyAsHtml $Output -SmtpServer $MailServer -Encoding default
}#>

$users="administrator@demo.com"
if ($HTMLReport -ne "")
{
   foreach ($user in $users)
{
      Write-Host "Sending Email notification to $user"

  $smtpServer = "172.168.1.50"
```

```
$smtp = New-Object Net.Mail.SmtpClient($smtpServer)
$msg = New-Object Net.Mail.MailMessage
$msg.To.Add($user)
    $msg.From = "zengchuixin101@demo.com"
$msg.Subject = "[系统组每月巡检]邮件系统环境检查报告"
    $msg.IsBodyHTML = $true
    $msg.Body = get-content $HTMLReport
$smtp.Send($msg)
    $body = "邮件系统环境检查报告"
 }
}
```