Quest™

Foglight™ for System Preparation ActionPack 5.6.3.4

User and Reference Guide

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Legend

WARNING: A WARNING icon indicates a potential for property damage, personal injury, or death.

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IMPORTANT NOTE, **NOTE**, **TIP**, **MOBILE**, or **VIDEO:** An information icon indicates supporting information.

Foglight for Scripting ActionPack User and Reference Guide
Updated - April 2017
Foglight Version - 5.7.5.8
Cartridge Version - 5.6.3.4

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1

Using the System Preparation ActionPack

This *Foglight for System Preparation ActionPack User and Reference Guide* provides requirements, configuration instructions, and conceptual information on how to use the Foglight for System Preparation ActionPack. Using the Foglight for System Preparation ActionPack, Foglight can configure physical and virtual machines that are running a Microsoft Windows OS.

This guide is intended for any user who wants to use Foglight for System Preparation ActionPack to work with the physical and virtual machines that are running a Microsoft Windows OS.

This chapter provides information about requirements that need to be met for the Foglight for System Preparation ActionPack to work properly, and an overview of the actions included in this ActionPack.

ActionPack for System Preparation Requirements

This section contains information about ActionPack for System Preparation requirements.

Foglight for System Preparation ActionPack Support Matrix

Support Matrix

ActionPack	ActionPack Version	Requires Foglight Version	Supported Target Systems
System Preparation	5.6.2	6.6	Windows XP Pro SP3 32bit Windows XP Pro SP3 64bit Windows Vista Business SP2 32bit Windows Vista Business SP2 64bit Windows 2003 R2 SP2 32bit Windows 2003 R2 SP2 64bit Windows 2008 Std SP2 32bit Windows 2008 Std SP2 64bit Windows 2008 Std R2 Windows 7 Ultimate

Support Limitations

The *Run System Preparation* action uses *Windows XP Service Pack 3 Deployment Tools to connect to* virtual machines (with Microsoft Windows 2003 Server and Microsoft Windows XP OS) and change operating system settings.

PowerShell Requirements

1. Install Microsoft .NET 2.0 (if necessary).
2. Install PowerShell v2 (if necessary).
3. Make sure *powershell.exe* is on the user's PATH.
4. Configure PowerShell to enable script files execution. For example:

   ```
   powershell -command "& {Set-ExecutionPolicy remotesigned}"
   ```
5. Reboot the OS.

Services Requirements

Ensure that the **Server** service and **Remote Registry** service are running on the workstation where the COM server resides.

Local Security Settings

All settings in this section are configured using the **Local Security Policy** console.

To launch the console:

1. Open the Windows **Control Panel**.
2. Go to **Administrative Tools**.
3. Start the **Local Security Policy**. The **Local Security Settings** window opens.

Sharing and security model for local accounts

Navigate to **Security Settings** > **Local Policies** > **Security Options** > **Network access: Sharing and security model for local accounts**. Change the setting to **Classic**.

This only applies to Windows computers that are not a part of a domain.

DCOM Restrictions Policy

Make sure that the user account used has permissions to access, launch, and activate COM/DCOM/Automation objects.

To grant these permissions:

- Add the user to the predefined local group: *Administrators* for Windows XP; or *Distributed COM Users* for Windows Vista, Windows 2003, Windows 2008, and Windows 7.

If you cannot grant the group permission to the user, do the following:

1. Create a local user in the **Users** group.

2 Navigate to **Control Panel** > **Administrative Tools** > **Local Security Policy** > **Security Settings** > **Local Policies** > **Security Options**.

3 Double-click **DCOM: Machine Access Restrictions policy**. Click **Edit Security**. Add the user created above. Enable the **Remote Access** option.

4 Double-click **DCOM: Machine Launch Restrictions policy**. Click **Edit Security**. Add the user created above. Enable **Local Launch, Remote Launch, Local Activation,** and **Remote Activation** options.

5 Navigate to **Control Panel** > **Administrative Tools** > **Component Services** > **Computers**. Right-click **My Computer**, click **Properties**, and open the **COM Security** tab.

6 In the **Access Permissions** section, click **Edit Default**. Add the user created above. Enable the **Remote Access** option.

7 In the **Launch and Activation Permissions** section, click **Edit Default**. Add the user created above. Enable the **Local Launch**, **Remote Launch**, **Local Activation**, and **Remote Activation** options.

NOTE: In the Component Services section you can navigate to a specific component and grant permission from there, instead of doing so from the My Computer menu.

User Account Control

For Windows machines that are not part of a domain:

1 Open **Security Settings** > **Local Policies** > **Security Options**.

2 Disable the **User Account Control: Run all administrators in Admin Approval Mode** option.

Firewall Settings

To configure the firewall:

1 Enable all incoming traffic to the default DLL surrogate (*dllhost.exe*).

- Create a rule that allows all incoming traffic for `%systemroot%\system32\dllhost.exe`.
- For 64-bit systems only: create a rule that allows all incoming traffic for `%systemroot%\SysWOW64\dllhost.exe`.

2 Enable COM network access.

- For Windows XP only: create a rule that allows all incoming traffic for TCP Port 135 (DCE/RPC Locator service).
- For Windows Vista, 2003, and 2008: enable **COM+ Network Access (DCOM-In)** rule for active profile.

3 Enable **File and Printer sharing access**.

- For Windows XP: enable **File and Printer sharing exception** rule.
- For Windows Vista, 2003, and 2008: enable all rules in the **File and Printer sharing** group for active profile.

NOTE: Make sure that the scope defined for rules includes the host, which runs vFoglight.

Configuration Script

Use the script below to configure the firewall.

1 On the target machine create a file named *firewall-config.ps1* with the script listed below.

2 Run the script with Administrator's privileges using the following command:
`powershell -File firewall-config.ps1`

```
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#

$OS = Get-WmiObject Win32_OperatingSystem
$OSBuildNumber = $OS.BuildNumber

$OSCaption = $OS.Caption

$useAdvancedFirewall = $true
$COMNetworkAccessGroup = "COM+ Network Access (DCOM-In)"
if (($OSBuildNumber -eq 2600) -or ($OSBuildNumber -eq 3790)) {
    $useAdvancedFirewall = $false
}

if ($OSBuildNumber -eq 7600) {
    # Windows 7
    $COMNetworkAccessGroup = "Windows Management Instrumentation (WMI)"
}

if ($useAdvancedFirewall) {
    Echo "Configuring firewall for Windows Vista/2008/7"
    netsh advfirewall firewall add rule name="DLL Host (32-Bits)" dir=in
action=allow program="%systemroot%\system32\dllhost.exe"
    netsh advfirewall firewall add rule name="DLL Host (64-Bits)" dir=in
action=allow program="%systemroot%\SysWOW64\dllhost.exe"
    netsh advfirewall firewall set rule group=$COMNetworkAccessGroup new enable=yes
    netsh advfirewall firewall set rule group="File and Printer Sharing" new
enable=yes
}
else {
    Echo "Configuring firewall for Windows XP/2003"
    netsh firewall add allowedprogram "%systemroot%\system32\dllhost.exe" "DLL Host
(32-Bits)" ENABLE
    netsh firewall add allowedprogram "%systemroot%\SysWOW64\dllhost.exe" "DLL Host
(64-Bits)" ENABLE
    netsh firewall add portopening TCP 135 "DCE/RPC Locator service" ENABLE
    netsh firewall set service FileAndPrint ENABLE}
```

COM and Automation Objects

The **COM and Automation** objects are required to perform remote tasks on Windows machines that are not configured for remote activation. Therefore additional configuring of the DLL surrogate is required.

Registry Permissions

Make sure that the Administrator user has Full Control access to the following registry keys:

- HKEY_LOCAL_MACHINE/Software/Classes/AppID
- HKEY_LOCAL_MACHINE/Software/Classes/CLSID/{0D43FE01-F093-11CF-8940-00A0C9054228}
- HKEY_LOCAL_MACHINE/Software/Classes/CLSID/{13709620-C279-11CE-A49E-444553540000}
- HKEY_LOCAL_MACHINE/Software/Classes/CLSID/{72C24DD5-D70A-438B-8A42-98424B88AFB8}
- HKEY_LOCAL_MACHINE/Software/Classes/CLSID/{76A64158-CB41-11D1-8B02-00600806D9B6}

Configuration Script

Use the script below to configure DCOM.

1. Create a file named *dcom-config.ps1* that contains the script below on the target machine.
2. Run the script on behalf of the **Administrator** user using the following command:
   `runas /user:Administrator powershell -File dcom-config.ps1`

```
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#

Function ConfigureAppID($appId,$appDescription,$systemGlobal) {
    Echo "Processing $appId ($appDescription)"

    if ($systemGlobal) {
        $classesKey = "HKLM:\Software\Classes"
    }
    else {
        $classesKey = "HKCU:\Software\Classes"
    }

    $AppIDKey = $classesKey + "\AppID"

    if (!(Test-Path $AppIDKey)) {
        $item=New-Item -Name "AppID" -Path $classesKey -Type directory
    }

    $CLASS_AppIDKey = $AppIDKey + "\{$appId}"
    if (!(Test-Path $CLASS_AppIDKey)) {
        $item=New-Item -Name "{$appId}" -Path $AppIDKey -Type directory
    }
    Set-ItemProperty -Path $CLASS_AppIDKey -Name "(default)" -Value
"$appDescription"
    Set-ItemProperty -Path $CLASS_AppIDKey -Name "DllSurrogate" -Value ""
}

Function ConfigureCLSID($clsId,$appId,$systemGlobal) {
```

```
    Echo "Processing $clsId"

    $name = (Get-ItemProperty -Path "HKLM:\Software\Classes\CLSID\{$clsId}\ProgID" -
Name "(default)")."(default)"
    Echo $name

    if ($systemGlobal) {
        $classesKey = "HKLM:\Software\Classes"
    }
    else {
        $classesKey = "HKCU:\Software\Classes"
    }
    $CLSIDKey = $classesKey + "\CLSID"
    $AppIDKey = $classesKey + "\AppID"

    if (!(Test-Path $CLSIDKey)) {
        $item=New-Item -Name "CLSID" -Path $classesKey -Type directory
    }

    $CLASS_CLSIDKey = $CLSIDKey + "\{$clsId}"
    if (!(Test-Path $CLASS_CLSIDKey)) {
        $item=New-Item -Name "{$clsId}" -Path $CLSIDKey -Type directory
    }
    Set-ItemProperty -Path $CLASS_CLSIDKey -Name "AppID" -Value "{$appId}"
}

Function ConfigureDCOM($appId,$systemGlobal) {
    if (!$appId) {
        $appId = [System.Guid]::NewGuid()
    }
    $appDescription = "Default DLL Surrogate"

    ConfigureAppID -appId $appId -appDescription $appDescription -systemGlobal
$systemGlobal

    $CLSIDS = @(
        # Scripting.FileSystemObject
        "0D43FE01-F093-11CF-8940-00A0C9054228",
        # Shell.Application
        "13709620-c279-11ce-a49e-444553540000"
        # WScript.Shell
        "72C24DD5-D70A-438B-8A42-98424B88AFB8"
        # WbemScripting.SWbemLocator
        "76A64158-CB41-11D1-8B02-00600806D9B6"
    )

    foreach ($clsId in $CLSIDS) {
        ConfigureCLSID -clsId $clsId -systemGlobal $systemGlobal -appId $appId
    }

}
ConfigureDCOM -systemGlobal $true
```

Actions

This section contains descriptions of the action included in this ActionPack.

Run System Preparation

Pre-conditions

- If the computer belongs to a workgroup instead of a domain, make sure that it does not use simple file sharing.
- If the firewall is turned on, allow your COM application network access to your machine.
- The remote host must be powered on.

Table 1. Run System Preparation Input Parameters

Name	Type	Description
Domain/domain	String	The current computer domain.
User name/userName	String	The user name to log into the computer OS.
User password/userPassword	String	The user password to log into the computer OS.
Local path to sysprep/sysprepPath	String	The local path to Windows XP/2000 sysprep utility and others files (sysprep.exe, setupcl.exe, factory.exe).
Admin password/adminPassword	String	Administrator account password.
Product key/productKey	String	Product Key for each unique installation of Microsoft Windows.
Full name/fullName	String	User full name.
Organization/OrgName	String	Organization name.
Computer name/computerName	String	Computer name.
Use server license mode/useServerLicense	Boolean	Determines whether to install Microsoft Windows Server, Microsoft Windows Advanced Server, Limited Edition, or Microsoft Windows Server 2003, Datacenter Edition per-server, per-device, or per-user license.
Number of client licenses/numLicensesPerSeat	Integer	The number of client licenses purchased for the server.
Join domain/JoinDomain	Boolean	Determines whether to join a new domain or workgroup.
Target domain/joinDomain	String	The name of a new domain, to which the computer will be added.
Domain administrator/domainAdmin	String	Domain administrator’s login.
Domain admin password/domainAdminPassword	String	Domain administrator’s password.
Command line parameters/cmdLineParams	String	Parameters to add to the sysprep command.
Use DHCP/useDHCP	Array of Boolean	Specifies whether to use Dynamic Host Configuration Protocol (DHCP).
MAC Address/macAddress	Array of String	MAC address of the network adapter.
IP address/ipAddress	Array of String	IP address for the network connection.
Subnet mask/subnetMask	Array of String	Subnet mask to be assigned to the network interface.
Default gateway/defaultGateway	Array of String	Default gateway to be assigned to the network interface.

Table 1. Run System Preparation Input Parameters

Name	Type	Description
DNS Server Search Order/dnsServerSearchOrder	Array of String	A comma-separated list of IP addresses to use when searching for the DNS server on the network.
DNS Domain/dnsDomain	Array of String	The suffix of the network connection that uses this adapter.

Post-conditions

- The OS restarts during the action execution.
- After the first boot, the system preparation process executes.
- SID, IP address, computer name, and other settings are modified.

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