



[TechNet Home](#) > [Windows Server 2003 TechCenter Home](#) > [Identity and Directory Services](#) > [Active Directory](#)

## Best Practices for Deploying Printer Location with Active Directory

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### On This Page

- ↓ [Introduction](#)
- ↓ [Creating the Location Schema](#)
- ↓ [Configuring Printer Location and Setting Location Policies](#)
- ↓ [Setting Standards When Printer Location Tracking is Disabled](#)
- ↓ [Summary](#)
- ↓ [Related Links](#)

### Introduction

In network environments, most users do not need to know the physical location of files, databases, or Web sites. However, they do need to know the physical location of hardware devices, such as printers. The printer location tracking feature in Microsoft Windows 2003 helps users find printers by storing their actual location in the Microsoft Active Directory service. When this feature is enabled, the location string is displayed automatically for each printer.

To use this feature, your network environment must have the following characteristics:

- A Windows 2000 or Windows 2003 domain controller (which, by definition, runs Active Directory) and preferably more than one subnet.
- A network IP addressing scheme that corresponds roughly to the physical layout of your enterprise (not required but very helpful).
- Client computers that can query the directory service.
- A subnet object for each site. Subnet objects can be created using Active Directory Sites and Services.
- Your own naming convention for printer location
- Administrator privileges on the print server to set the printers location field, and permissions to create sites/subnets on the Domain Controller to populate the location field.

Group Policy lets you configure printer location tracking for a group of computers using the Computer Location and Pre-Populate Printer search location text policies.

**Notes:** For more information about these policies, see the Explain tab for each policy or the Windows Server 2003 Resource Kit Group Policy Reference (Gp.chm).

For the steps to set up printer location tracking, type "printer location tracking" in the index of Windows 2003 Server Help and Support Center.

The location search ability can be very useful for your clients, as long as all printers in your organization use a consistent schema that allows users to search. The location schema used for printers should be planned out thoroughly before deployment as it will be used throughout your printing organization. This white paper outlines some best practices for creating and maintaining a useful location schema.

The major steps involved in this effort are:

1. Verify the printer names and their subnets. Its best to keep this information in a spreadsheet or database and update it regularly. This information is helpful when upgrading print servers and for general maintenance as well.
2. Define the location tree structure.
3. Configure the printer locations.
4. Enable the printer location tracking policy.
5. Test the final setup.

[↑ Top of page](#)

## Creating the Location Schema

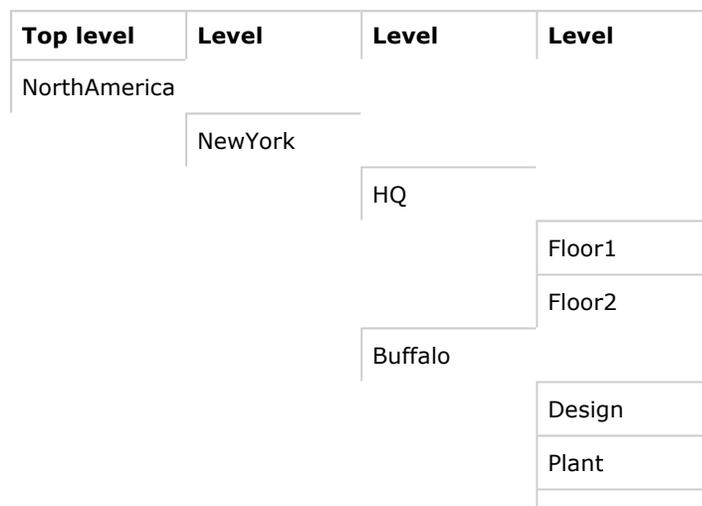
As noted, you must first create and maintain a location schema to allow users to search for location. It is important to think carefully about your location schema before deploying it. You want to make sure that it will be flexible enough to describe all locations where printers can be placed. This schema will be used by your entire organization, so its worth spending the time up front to design it properly.

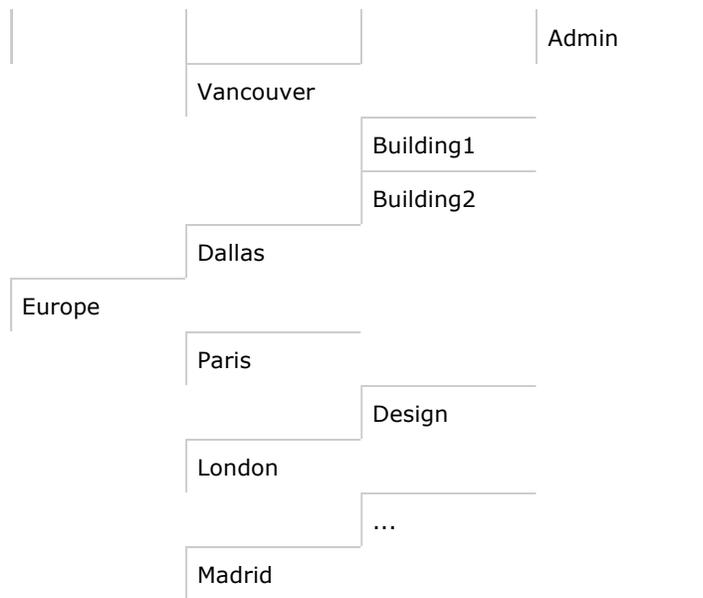
Because location names are used by end users, the names should be simple and easy to recognize. Avoid using special names known only to facilities management. For better readability, avoid using special characters in a name, and keep names to a maximum of 32 characters to make sure that the whole name string is visible in the user interface. Names should conform to the following characteristics:

- Location names are in the form *name/name/name/name/...* (The slash (/) must be the dividing character.)
- A name can consist of any characters except for the slash (/).
- The number of levels to a name is limited to 256.
- The maximum length of name is 32 characters.
- The maximum length of an entire location name is 260 characters.

In particular, you should make certain that the schema is flexible enough to allow for future changes in your organization. Ideally, the schema can follow the subnet layout of your organization (assuming you have a geographical-based subnet hierarchy), because then it is possible to write scripts that will automatically populate the location field of all of your printers based on the subnet.

As an example, consider an organization with multiple locations in North America and Europe. The naming scheme for the organization might be as follows:





Note that the tree varies in depth depending on the complexity of the organization and the amount of detail available in the IP network. The naming convention for this example includes more levels than for a smaller organization located in a single city, or a single building. The full name of the design building in Buffalo, New York is **NorthAmerica/NewYork/Buffalo/Design**; for the design building in Paris, the full name is **Europe/Paris/Design**, and the smaller office in Dallas has the name as **NorthAmerica/Dallas**.

[↑ Top of page](#)

## Configuring Printer Location and Setting Location Policies

To enable printer location tracking and set the automatic print population policy, do the following:

1. Open **Active Directory Sites and Services**.
2. Create the sites you want, if you haven't done so already.
3. Associate a subnet for this newly created site, if you haven't done so already.
4. Right-click each subnet you created, and then click **Properties**.
5. Click the **Location** tab, type the location of the subnet in the following format based on your location naming convention, and then click OK:

location/location

6. Using Group Policy, double-click the **Pre-populate printer search location** policy setting, and then click to enable it.

The following example demonstrates how to set the policy to a group (organizational unit in Active Directory terms) of users that use that printer. However, you can set the policy to a different object using the appropriate Active Directory utility.

1. Start **Group Policy** from **Active Directory Users and Computers**.
2. Right-click the organizational unit you want to apply the policy to, and then click **Properties**.
3. Click the **Group Policy** tab, and then click **New** to create a new object. Type the name of the

new object, and then click **OK**.

4. Select the newly created object, and then click **Edit**.
5. Expand **Computer Configuration**, then **Administrative Templates**, and then **Printers**.
6. Double-click the policy setting **Pre-populate printer search location**, and then click to enable it. When you search the directory service for printers, it fills in your location field using the value specified in the Location tab of the Subnet properties page. If this policy is disabled (default), the location will be empty.

**Note:** It is also possible to set location manually per-computer by group policy.

7. Open **Printers and Faxes**.
8. Right-click the printer and then click **Properties**.
9. Type the printer location based on your schema, or click **Browse** to find it. You probably want to be more precise in describing the printer location than the subnet location. For example, for the subnet location NorthAmerica/Dallas, you might type *NorthAmerica/Dallas/Floor42/Room4207*.
10. Repeat the last two steps for each printer in Active Directory.

It is recommended to script Steps 710 by using the prnadmin.dll utility that ships in the resource kit. To use this utility, you must refer to your existing spreadsheet or database of printers and their locations and then, rather than opening each printers properties to set the location, you can use the tool to set the printer locations according to the inputted information.

The following is an example of how one can set the location using prnadmin.dll. Typing **cscript prncfg.vbs /?** in the command prompt will show this example.

```
cscript prncfg.vbs -s -b PrinterName -l "Building A/Floor 100/office 1"
```

Where PrinterName can be a UNC name.

**Note:** To open Active Directory Sites and Services, click **Start**, point to **Programs**, point to **Administrative Tasks**, and then click **Active Directory Sites and Services**.

[↩ Top of page](#)

## Setting Standards When Printer Location Tracking is Disabled

As mentioned previously, you can add information to **Location** in the **General** tab of the printer property page even if printer location tracking is disabled. However, this imposes a potential problem. When users search for printers on the tenth floor, they need to know exactly what to type in the **Find Printers** property page when they click **Start**, then **Search**, and then **For Printers**. Incidentally, wildcards such as \* (asterisk) may be used to help find printers when exact or complete location names are unknown. When printer location tracking is enabled, the **Location** field in the **Find printer** property page is filled in automatically.

[↩ Top of page](#)

## Summary

As described in the preceding sections, the location search ability can be very useful for your clients, as long as all printers in your organization use a consistent schema that allows users to search. Following the recommendations in this white paper will help create a consistent and useful schema that you can deploy throughout your print organization.

[↩ Top of page](#)

## Related Links

See the following resources for further information:

For more information about using the Active Directory for printing, choose the Active Directory and Printing link at <http://www.microsoft.com/windows2000/technologies/fileandprint/print/default.asp>

- For more information about Windows Print Servers in general, visit the Print Server Web site at <http://www.microsoft.com/windows2000/technologies/fileandprint/print/default.asp>
- For the latest information about Windows 2003 Server, see the [Windows Server 2003 web site](#) at <http://www.microsoft.com/windowsserver2003/default.msp>.

[↑ Top of page](#)

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