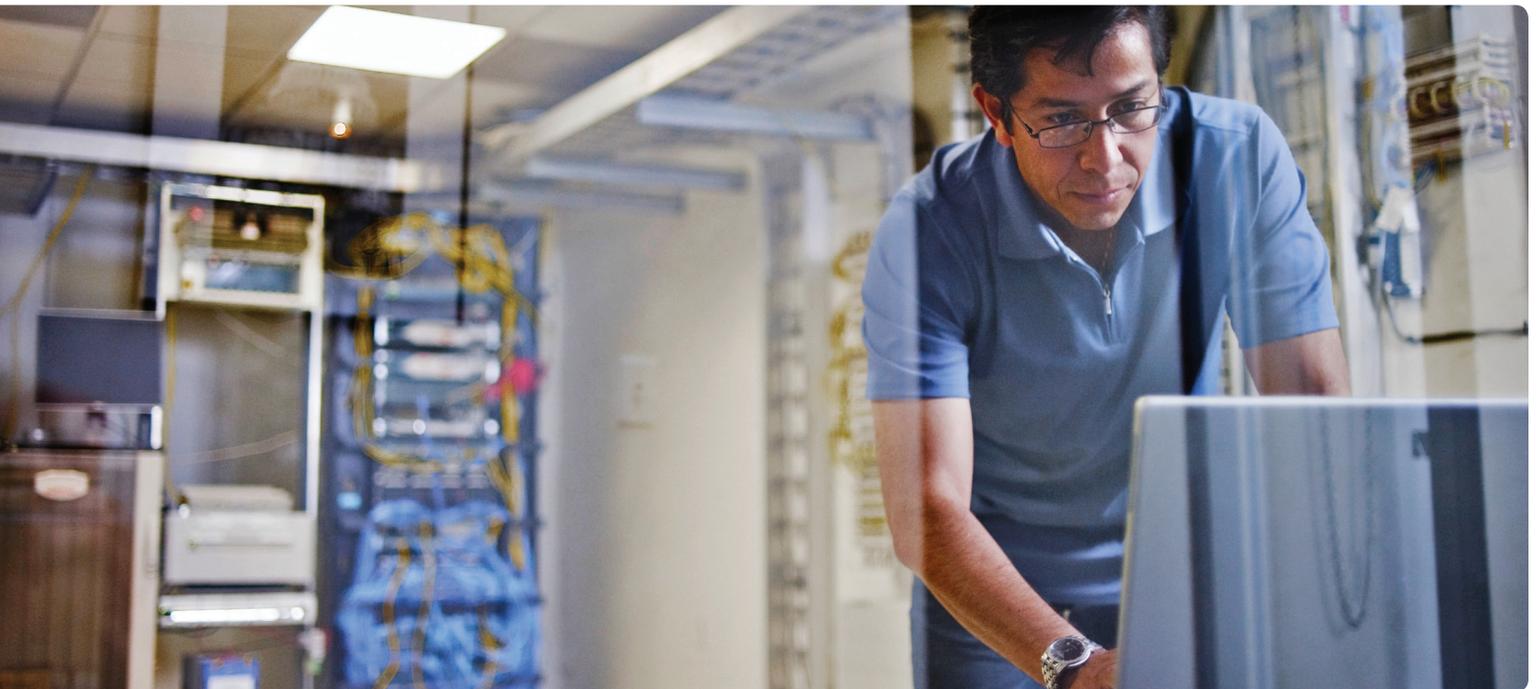


Ensuring High Availability of Your Active Directory Forest

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Abstract

Active Directory is essential to business-critical applications from sales tools to email. Because its domains are connected by trusts, the loss of any domain in your AD forest can seriously hurt your business. This document describes the symptoms of a failing or failed domain or forest, details how to prepare for the possibility of domain or forest failure, and compares the manual forest recovery procedure recommended by Microsoft with Dell's automated recovery solution, Recovery Manager for Active Directory Forest Edition.

Introduction

The failure of even a portion of your Active Directory forest has serious consequences: Email would no longer be functioning. Databases would fail to allow reads or writes to the data stored within the tables. All applications that rely on Active Directory for authentication would fail to function (sales, accounting and marketing tools, file shares, even printing.)

Therefore, organizations need to be able to recover from the failure of an Active Directory domain or entire forest quickly and completely. Unfortunately, Microsoft's recommended recovery procedure is long and complex, and imposes requirements that are difficult or impossible to meet. Recovery Manager for Active Directory Forest Edition from Dell® overcomes these limitations, offering automated forest recovery that is dramatically faster and more complete.

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The Active Directory forest

Active Directory (AD) is dynamic, complex, and sophisticated. Because all domains in your Active Directory forest are connected by trusts, any loss of a trust or domain will cause significant communication issues. For example, if you have a domain that is non-responsive, the entire forest will be affected. All applications that rely on Active Directory—such as email, sales quoting software, sales processing applications, CRM software, as well as accounts receivable and payable applications—will fail. Nothing will make the overall network function properly until the domain is fully functional again.

Of particular importance to the forest is the root domain. The root domain is the epicenter for central communication, decisions, and overall control of the forest. If the root domain is lost, damaged or otherwise unavailable, the entire structure is placed in jeopardy. Therefore, organizations need to be able to quickly and reliably recover when a forest fails.

Symptoms of a failing (or failed) Active Directory forest

How can you tell that a domain or an entire Active Directory forest is faltering and might soon fail? The symptoms are a variety of odd behaviors that usually frustrate administrators and users alike.

One common symptom of a failing Active Directory forest is slow logons. First, DNS must be working properly to ensure that clients and servers are directed to resources properly, so slow logons can be a symptom of DNS problems. Slow logons can also be the result of problems with the domain controllers, servers, authentication, applications, or trust relationships, all of which point back to issues with the Active Directory forest.

Another common symptom of Active Directory issues is when users, clients, servers, applications, or services cannot access one or more domains or network

resources. Since all of the moving parts of your forest are essential to resource access, one small glitch can cause problems for everyone.

Essential business applications can also fail, since they rely on authenticating to Active Directory. If Active Directory, DNS, domain controllers, network communication or anything else is faltering, users can have problems accessing these business applications.

When these symptoms arise, it is clear there is a problem, but tracking down the root issue is often difficult. More often than not, issues related to the failure of an Active Directory forest are not logged, because of limitations of the operating system and Active Directory itself. If the root issue is due to malicious behavior, logs will also likely be unavailable, since monitoring must have been implemented before the malicious activity took place.

Preparing for an Active Directory forest disaster

Organizations can help prepare for the possibility of a forest-wide disaster by documenting their Active Directory infrastructure in detail. Although this might seem like a small task, it actually takes tremendous time and patience. Leaving out even one detail about the forest can halt the recovery or cause it to fail completely.

At a minimum, you should document the following information:

- Active Directory-related information
- Domain names (NetBIOS and DNS)
- Domain relationships such as trusts (both internal and external)
- Group memberships (admin groups, all security groups, and distribution groups)
- Exchange details and information
- Group Policy Objects (GPOs) and all links
- AD sites, IP subnets, and replication intervals
- Domain controller-related information
- Domain controller names
- FSMO roles
- Global catalog servers

- Certificates for all security
- DNS-related information
- AD-integration
- Delegations
- Permissions
- Special settings and entries

As you can see, many small details need to be documented. A third-party product can help; be sure to look for one that not only documents all of this information automatically, but also keeps it updated as your environment changes. Having detailed, up-to-date information about your forest is critical for recovery situations, and also useful in troubleshooting Active Directory problems.

Recovering your Active Directory forest

Microsoft has published several documents detailing how to recover from a loss of your Active Directory forest. Unfortunately, the procedures in these documents have considerable drawbacks.

First, the procedures rely on manual Microsoft tools. These tools require that all steps be performed by an administrator in the proper order, with the administrator babysitting the entire process. The documents do not estimate the time required to complete the restoration procedure, but it could easily take many days.

Second, the Microsoft procedure specifies 67 steps for each domain or domain controller being restored. Although some companies have just a few domains and domain controllers, medium to large organizations might have 10, 20, or 30 domains, each with 50 or 100 domain controllers. Performing a 67-step procedure for each one would be prohibitively long, and missing a step or performing a step out of order is highly likely.

Third, most steps in the Microsoft restoration procedure require that the administrator be physically present at the domain controller being restored. However, organizations today are

spread over states, regions, and even continents, making this requirement nearly impossible to meet in a reasonable time frame.

Finally, the Microsoft procedure initially restores only a subset of your domain controllers, giving you only limited functionality. The rest of the domain controllers have to be created from scratch after the forest is restored, so restoring complete functionality takes additional work and time.

Together, these drawbacks to Microsoft's procedure for manually restoring an Active Directory forest make the logistics of restoration nearly impossible.

Recovery Manager for Active Directory Forest Edition

Recovery Manager for Active Directory Forest Edition offers an alternative that is closely aligned with Microsoft's approach. Forest Edition documents all of your domains, domain controllers, and other essential Active Directory components for you. When a failure occurs, it walks you through the restore procedure, ensuring all steps are done in the proper order and that no steps are missed.

Forest Edition also eliminates the requirement that the administrator be physically present at each domain controller being restored. And it can restore all your domain controllers simultaneously rather than one at a time. This reduces the overall recovery time and eliminates the complexity of determining which domain controller must be restored first, second, third, etc.

With Forest Edition, you can get your entire Active Directory forest back online as fast as possible, without the manual steps and other drawbacks of the Microsoft procedure.

Conclusion

Because a failed Active Directory domain or forest can have a devastating effect on your organization's business continuity, it is critical to have a disaster

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recovery plan in place. Recovery Manager for Active Directory Forest Edition will help you restore your Active Directory forest, regardless of the root issue, with little manual effort on your part. It automatically keeps an up-to-date record of all important details of your forest, eliminating significant manual effort. Then, if a failure occurs, it restores all your domain controllers simultaneously, without requiring an administrator to visit each domain controller and without the risk of steps being missed or performed out of order. With Forest Edition, your Active Directory forest will be back up dramatically faster than with any other restore procedure.

About the author

Derek Melber (MCSE and MVP) is president of BrainCore.Net AZ, Inc., an independent consultant and speaker, as well as author of many IT books. Derek educates and evangelizes Microsoft technology, focusing on Active Directory, Group Policy, security, and desktop management. As one of only 8 MVPs in the world on Group Policy, Derek's company is often called upon to develop end-to-end solutions regarding Group Policy for companies. Derek is the author of the *The Group Policy Resource Kit* by MSPress, which is the defacto book on the subject. Derek is also author of the Group Policy Video Mentor (Pearson), perfect for learning Group Policy basics.



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