10Exchange Server白手起家系列之十：客户端部署和管理

通过office resource kit中的工具进行用户profile的自动设定步骤和其他自定义安装的技巧。

自定义安装的目的：企业有一个统一的"安装点"，尽可能简化客户端的配置工作、便于日后的升级和补丁管理。

对office进行自定义，进行管理安装，之后，再进行打包。
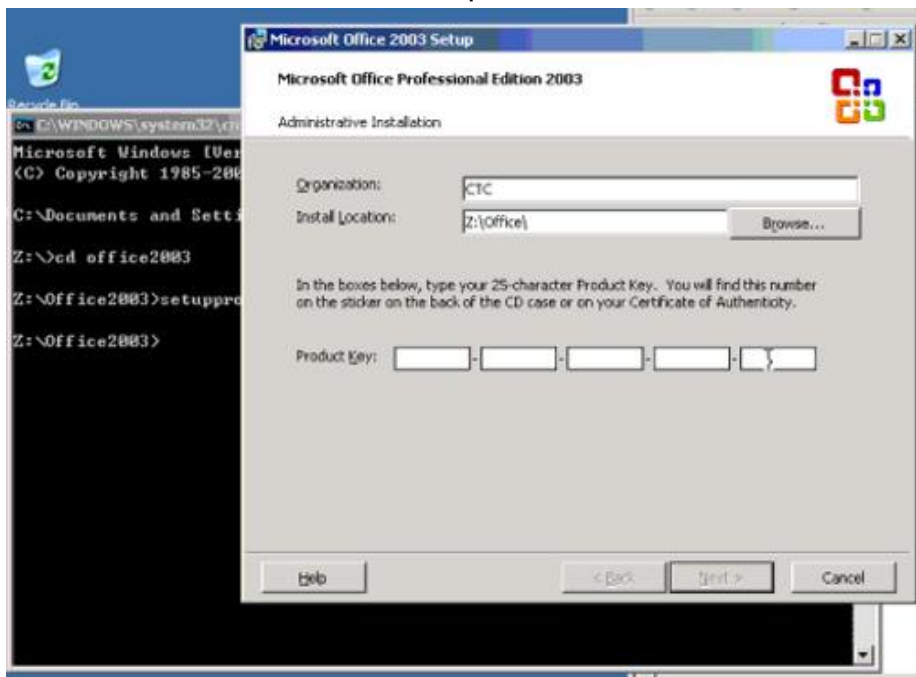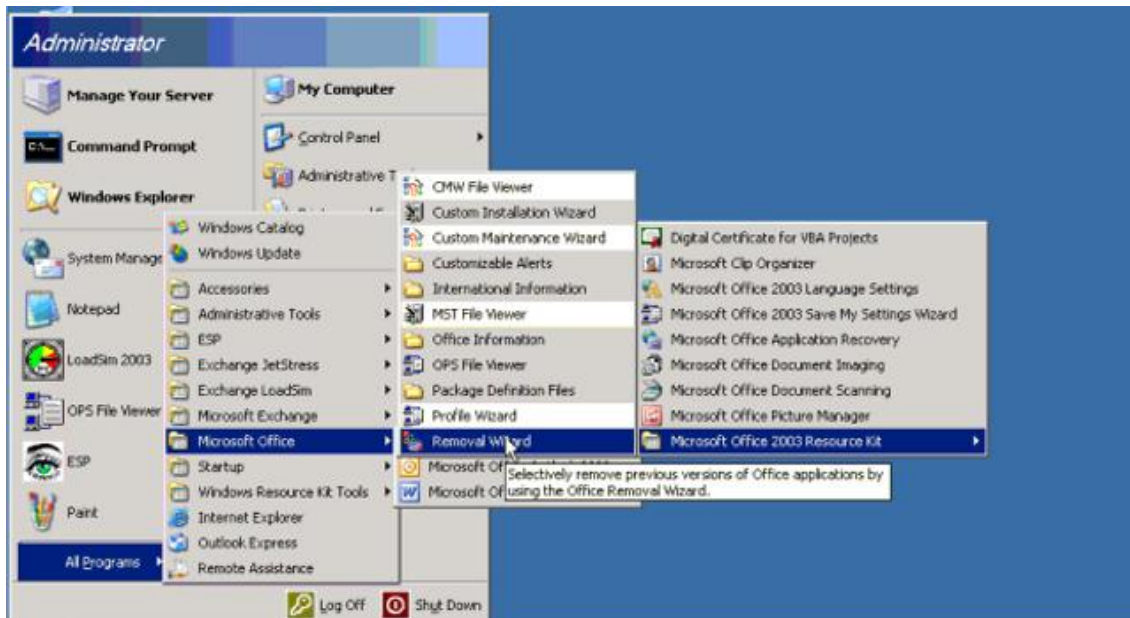
进入到office的目录，然后输入setup /a，a代表administrator

用户在客户端实际进行安装的时候，就不需要再输入一些信息了，比如cdkey。

我们把管理安装好的office安装文件，放到一个共享里面，即分发点里面。

如果想让用户完全自动化的安装，不需要点击下一步下一步，那么需要借助于office resource kit。

CMW FILE VIEWER是配置文件查看器工具。可以查看自定义安装对系统做了哪些改变和变化。该工具用的不多。

custom alerts自定义office的错误对话框。

HTML help workshop把日常的HTML文件做成chm的格式。

Customizable Alerts
The Customizable Alerts folder contains the Errormsg.xls workbook, which includes information needed to work effectively with custom error messages. This workbook consists of several worksheets with lists of error messages for Microsoft Office 2003 applications.
http://support.microsoft.com/kb/313053/en-us

HTML Help Workshop
Version 1.3 of Microsoft HTML Help Workshop, included with the Microsoft Office 2003 Editions Resource Kit, can be used to create custom Help topics that provide information and assistance specific to your organization. You can also integrate your custom Help topics with the Microsoft Office 2003 Help system, or link them to custom Answer Wizard resource files to create a complete assistance solution.

International Information
The International Information folder contains updated reference files that provide information on international versions of Microsoft Office 2003.

office converter pack对于旧版本的office文档转换到新版本里面。

MST File Viewer
The MST File Viewer (MSTView.exe) enables you to view the customizations that a transform (MST file) makes when Microsoft Office 2003 is installed on a user's computer. Transforms are created by using the Custom Installation Wizard.

Office Converter Pack
The Microsoft Office Converter Pack bundles together a collection of file converters and filters that can be deployed to users. The Converter Pack can be useful to organizations that use Microsoft Office 2003 in a mixed environment with earlier versions of Office and other applications, including Office for the Macintosh and third-party productivity applications. While these converters and filters have been available previously, they are packaged together here for convenient deployment.
http://support.microsoft.com/kb/212265/

Office Information
The Office Information folder contains a variety of support files for Microsoft Office 2003, including the product file list, comprehensive registry key list, and security certificates. The following table lists the documents and other files available the folder.

office removeal winzard是一个office的移除向导，清理本地的旧版本的office。

office profile wizard类似于CIW工具，生成OPS文件，包含自定义的更改和配置信息。

Office Profile Wizard

The Office Profile Wizard helps you to create and distribute a default user profile that includes standard locations for files and templates. Using the Profile Wizard, you can preset options so that users do not have to customize their settings. You can also change default values to match your organization's needs or to ensure that users have access to shared templates. When you deploy a standard user profile, all of your users start with the same Office configuration.

http://support.microsoft.com/kb/308524/en-us

Silent restore: profwiz.exe /r <path to OPS file> [/d]

Office Removal Wizard

Although version removal functionality is built into Microsoft Office 2003 Setup and the Custom Installation Wizard, a stand-alone version of the Office Removal Wizard is available as well. You can use this tool to exert a detailed level of control over which files to remove and which to retain. For example, if you are upgrading in stages to Office 2003, you can use the Removal Wizard to remove previously installed versions of the specific applications you choose to upgrade.

OPS查看器可以查看OPS文件里面的内容。

OPS File Viewer

The OPS File Viewer (OPSView.exe) enables you to view changes that an Office profile settings file (OPS file) makes to a user's computer. This viewer also provides a list of all possible changes that the Office Profile Wizard can make to a user's computer through an OPS file.

Outlook Administrator Pack

If your organization is using Microsoft Outlook 98, Outlook 2000, Outlook 2002, or Microsoft Office Outlook 2003 with a server that has server-side security, such as Microsoft Exchange Server, you can customize the security features to meet your organization's needs. For example, you can control the types of attached files blocked by Outlook, modify the Outlook Object Model warning notifications, and specify user- or group-security levels.

Readme.doc file

package definition files是包定义文件工具，定义成SMS的格式，配合SMS服务器来使用。

Package Definition Files

The package definition files (SMS format) are used by Microsoft Systems Management Server to install Office remotely. For Microsoft Office 2003, the package definition files are consolidated into two core files: Office11.SMS, which covers all Office 2003 editions, and Mui11.SMS, which covers the Microsoft Office 2003 Multilingual User Interface Packs (MUI Packs). You must have Systems Management Server 2.0 with Service Pack 2 to deploy Office 2003.
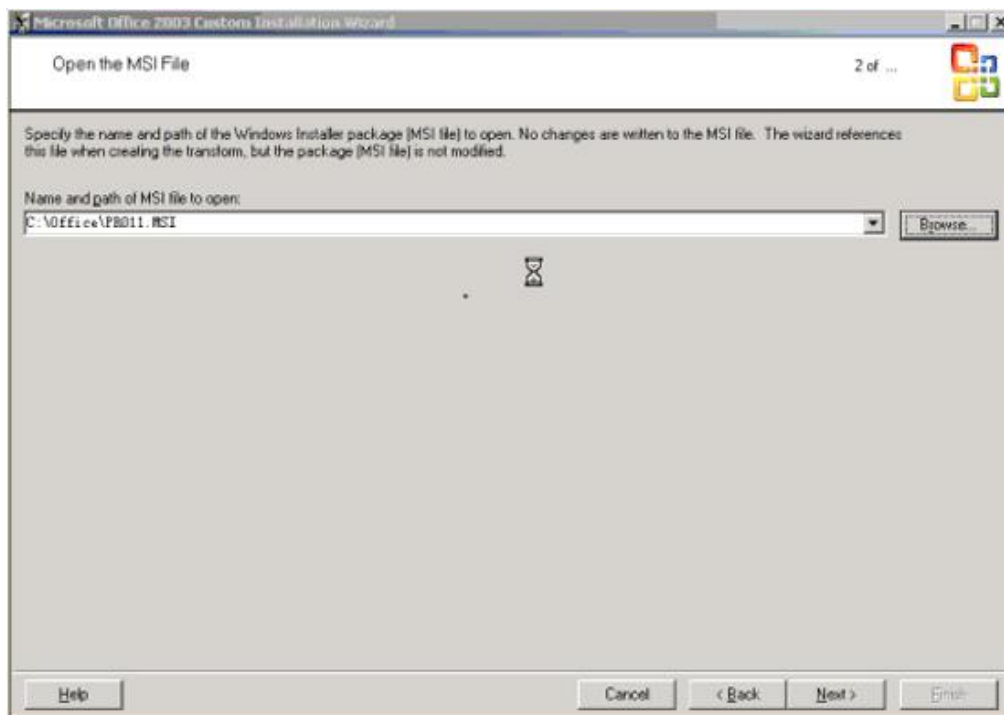
Policy Template Files

The policy template files provided with the Microsoft Office 2003 Editions Resource Kit enable you to set policies globally for users of Office on a network. By using policies, an administrator can quickly enforce a user configuration on users' computers when users, groups, or computers log on to the network.

http://support.microsoft.com/kb/826170/en-us

下载：
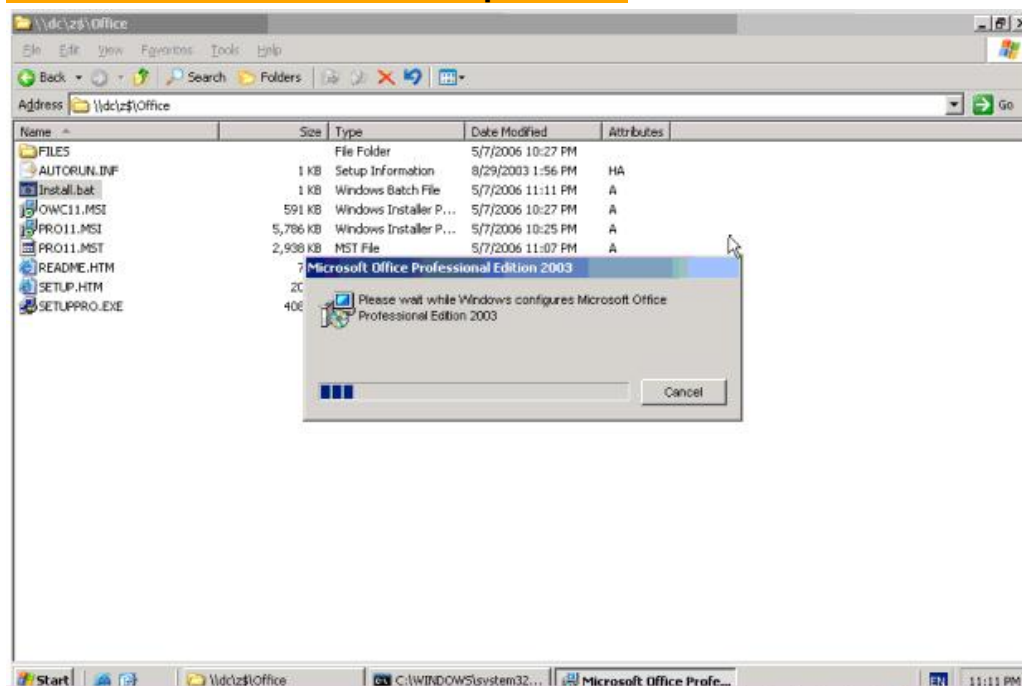➢   http://www.microsoft.com/office/ork/2003/tools/default.htm

CIW向导自定义。

向导完成后，生成mst文件。

通过运行安装命令，把pro11.mst的内容读入到pro11.msi安装程序里面。

PRF文件只是outlook的自定义设置，而MST是关系整个office的全局设置。

PRF是个纯文本的文件，可以用notepad打开。

使用RPCping来测试RPC协议通讯。

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11Exchange Server白手起家系列之十一：邮件系统日常维护的要点

预防性维护

◆ Prevention <u>IS</u> better than cure

◆ 防患于未然

 ➢ 60%以上的故障和停机跟人为失误和流程错误有关
 ➢ 系统的可靠性由组成它的每一个组件所决定
 ➢ Problems are the exception, not the rule.

木桶原理：能装多少水，由最短的木板决定。

90%以上的管理员并没有去尝试做预防性的维护。

◆ Around 90% of Exchange Administrators never attempt maintenance until disaster hits...Why?
 ➢ Low understanding of issues and problems
 ➢ No time, resources, or <u>budget to address</u> maintenance tasks
 ➢ Impact of "testing" with their production servers
 ➢ Assume the risk of doing nothing outweighs the risk of pro-active maintenance
 ➢ Technically capable of performing maintenance tasks, however they realise that the process of maintenance can be boring and take a long time

对于硬件和内存的最佳实践。

◆ 硬件
 ➢ 一致的硬件品牌和型号
 ➢ 选择高品质的硬件
 ➢ 定期更新固件和驱动的版本
 ➢ HCL：硬件兼容性列表

◆ 内存
 ➢ 使用ECC内存
 ➢ 多多益善

磁盘卷规划

- ◆ 磁盘
  - ➤ 正确的磁盘缓存配置
  - ➤ 硬件RAID
  - ➤ 卷配置
  - ➤ 推荐的系统和数据配置方式
    - ➤ C: SYSTEM DRIVE - RAID 1 (mirror)
    - ➤ 2 Partitions: 1 For System Files, 1 For Page File and MTA Data (x400)
    - ➤ E: SMTP QUEUES - RAID 0+1 (stripe / mirror)
    - ➤ 1 Partition: SMTP mail queues.
    - ➤ F: TRANSACTION LOGS - RAID 0+1 (stripe / mirror)
    - ➤ 1 Partition, Exchange Transaction Logs.
    - ➤ G: DATABASE FILES - RAID 0+1 (stripe /mirror) or RAID 5
    - ➤ 1 Partition, Exchange EDB Files.

还要防止CAS服务器的IIS日志满的问题。

- ➤ 确保有足够的磁盘空间，40%以上为宜
- ➤ 监控事务日志的容量
- ➤ 为存储和I/O进行计划
- ➤ 避免进行磁盘压缩

每一台服务器都有一致性的配置。

- ◆ Windows Server
  - ➤ 一致的软件版本和补丁
  - ➤ 设置系统日志的尺寸
  - ➤ 配置Dr.Watson为默认的调试器
  - ➤ 设置恢复选项(Dump)
  - ➤ DC的冗余
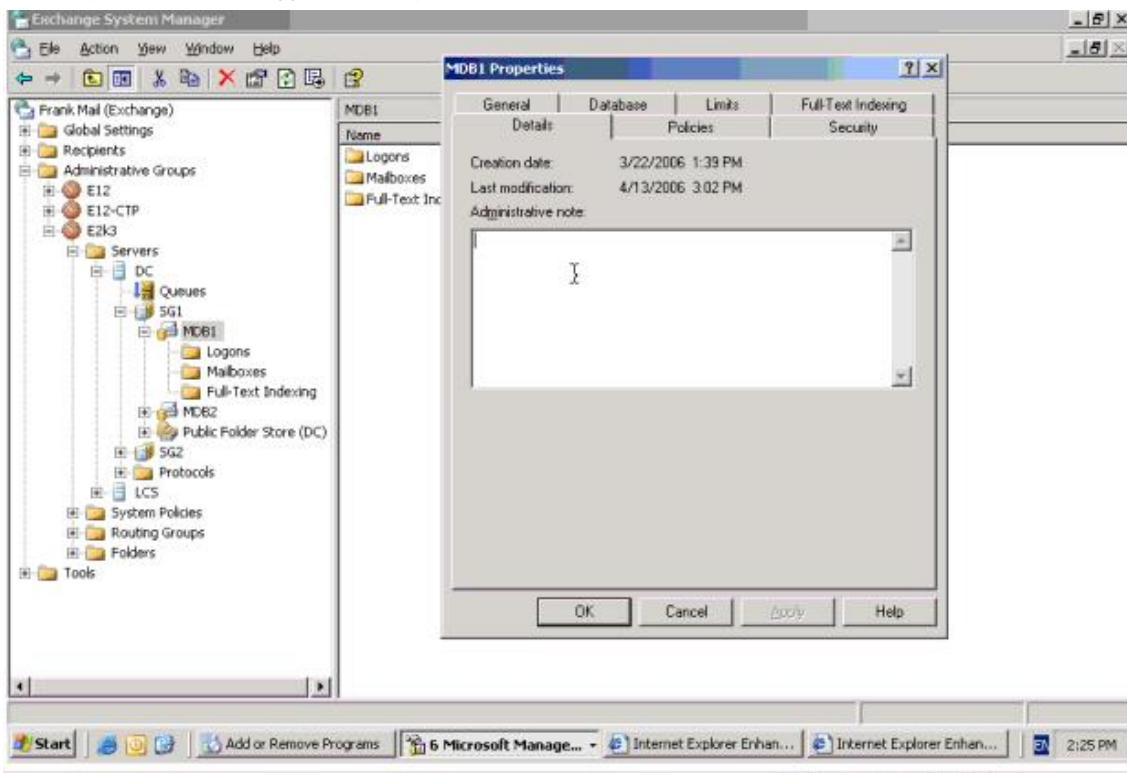 - ➤ /3GB

不建议开启循环日志，开启之后，就没有办法进行数据库完整的恢复。

因为海油exchange的备份窗口比较大，如果不开启循环日志，那日志盘很容易就撑满了。

在配置Exchange时采用的预防性措施

◆ Microsoft Exchange Configuration

➤ 禁用循环日志
➤ 数据库维护窗口设置(与备份的时间分开)
➤ 邮箱配额
➤ 使用安全组而不是单一的用户进行权限指派
➤ 严格的命名规则
➤ 经常性的使用管理员批注

写管理员批注，可以给其他管理员看到。

集群规划，挂载点，最佳实践标准命名

◆ 集群
  ➤ **Two Core Configurations:**
    ➤ EDC: 7-Node (A/A/A/A/P/p/p)
    ➤ RDC: 5-Node (A/A/A/P/p)
  ➤ **Mount Points**
    ➤ Log – MP to SG Data
    ➤ SMTP – MP to SG1 Data
    ➤ Backup – MP to Backup drive
  ➤ **Best Practices**
    ➤ Standardized Naming
      ➤ Resources, Nodes, EVS, Disks, IP, Backup sets

Exchange VS1
E: SG1 DATA
F: SG2 DATA
G: SG3 DATA
H: SG4 DATA
E\MP – SMTP
E\MP – SG1 LOGS
F\MP – SG2 LOGS
G\MP – SG3 LOGS
H\MP – SG4 LOGS

> 50% Fewer Drive letters

Microsoft TechNet

备份失败可以反映出系统的一些问题出来，比如备份程序终止，磁带满，备份因为数据库问题而终止。

如果exchange数据库一直处于备份状态（比如磁带满，需要更换磁带），那checkpoint文件就会锁死，如果锁死的时间过长，而且生成的日志文件超过1024个，那数据库就会离线。

◆ 备份和恢复
  Daily Full Online Backups of the Information and Directory Stores
    ➤ *Online backups check the integrity of the Exchange stores by performing checksum verification*
    ➤ *Full online backups manage the size of the transaction log volume by purging transaction logs at the conclusion of the backup*
    ➤ *Users may continue to access mailboxes and public folders during an online backup*
◆ Verify Backups
◆ Perform Recovery Drills
◆ Monitor Tape Drives for Maintenance

MSDTC和仲裁文件只是保存一些配置信息，不会有太大的访问行为。

推荐使用SCOM。

定期检查，跑脚本等方式，检查SCOM警报。

ESEUTIL工具的使用。

- ◆ ESEUtil
- ◆ For Maintenance We Are Interested In:
  - ➢ *Defragmentation (/d)*
  - ➢ *Integrity (/g)*
  - ➢ *File Dump (/m)*
  - ➢ *Copy File (/y)*
- ◆ **ESEutil is a powerful tool and needs to be used correctly, for these maintenance procedures we recommend only running against restored data not production boxes or in conjunction with PSS.**

ESEUTL进行离线数据库碎片整理。把原有数据库的内容一条条读出来，然后生成新的数据库文件。离线整理的时候一定要确保有足够的剩余空间。磁盘建议保留40%的剩余空间，否则维护的时候可能会有问题。

- ◆ Defragmentation – Why?
  - ➢ *If you have deleted a large amount of mailboxes*
    - ➢ *High Turn Over of Staff*
    - ➢ *Migration*
  - ➢ *If you had to run a hard repair of the database (ESEUtil /p - we do NOT recommend unless this is a last possible thing to do).*
  - ➢ *If you are experiencing a specific issue and have found a reference that says offline defrag will fix it.*
  - ➢ *As a general rule, only defrag to reclaim space if you're going to reclaim more than 30% of the space. You can look for Event ID1221 after nightly online defrag to get a conservative estimate of how much free space is in the database.*

可以整理到网络共享，整理完成后，需要手动操作：把原来的数据库文件删掉或重命名，然后把共享中的文件拷贝回来改成原来的名字。

- ◆ Streaming database is in a different path
  - ➤ **ESEUTIL /D priv1.edb /Sd:\streaming\priv1.stm** ✓

- ◆ Insufficient local drive space for defragmentation
  - ➤ **ESEUTIL /D priv1.edb /T\\Server2\d$\defrag.edb /F\\Server2\d$\defrag.stm**

- ◆ Automatic backup the <u>original</u> EDB + STM files
  - ➤ **/B\\Server2\d$\priv1.edb**

- ◆ Skip defragmentation of the streaming database.
  - ➤ **ESEUTIL /D priv1.edb /I**

数据库完整性的检查。比如服务器备份经常出现读取失败，或者outlook的某些用户经常打不开邮箱，那我们可以对所在的数据库进行完整性的检查。

- ◆ **ESE Integrity Check (/g) – Why?**

  - ➤ *"Dry run" of the repair function.*
  - ➤ *Problems that repair would address will be reported in the <database>.integ.raw file*
  - ➤ *The .raw file logs results for all tables in the database, not just ones that have problems*
  - ➤ *May abort prematurely if damage to the database is of such a nature that parts of the database must be repaired before other parts can be checked*
  - ➤ *If it aborts before it finishes does not necessarily mean that repair is <u>unlikely</u> to succeed*

数据库的一致性检查也是要离线的，也需要一定的磁盘空间。

通过file dump来查看详细的数据库内部的信息。

File Dump – Why?

- View *header information* for database, streaming database, checkpoint and transaction log files.
- View header information for *individual database pages.*
- Validate that a series of transaction log files forms a matched set and that all files are undamaged.
- View space allocation inside the database and streaming database files.
- View metadata for all tables or for a specific table in the database file.

MH可以查看数据库文件的文件头，查看checkpoint日志的指针文件。

File Dump – How?

- To view the header of a database, streaming database file or online backup patch file:
  - *ESEUTIL /MH {filename.edb | filename.stm | filename.pat}*
- To view the header of a checkpoint file:
  - *ESEUTIL /MK filename.chk*
- To view the header of a transaction log file:
  - *ESEUTIL /ML filename.log*

isinteg在数据库逻辑的层面查看数据库是不是完整，比如：有一个邮箱点击的时候就会死机，这个时候原因就是邮箱的内容索引可能有问题，索引崩溃，在数据库里面找不到对应的表， 然后客户端outlook就奔溃了。

- **ISINTEG**
  - *Focuses on logical database rather than physical (ESEutil).*
- **2 major modes in ISinteg:**
  - *Default mode: in which the tool runs the tests you specify and reports its findings.*
  - *Fix mode: where you specify optional switches instructing ISinteg to run the specified tests and attempt to fix whatever it can.*
- **For maintenance work we use DEFAULT mode**

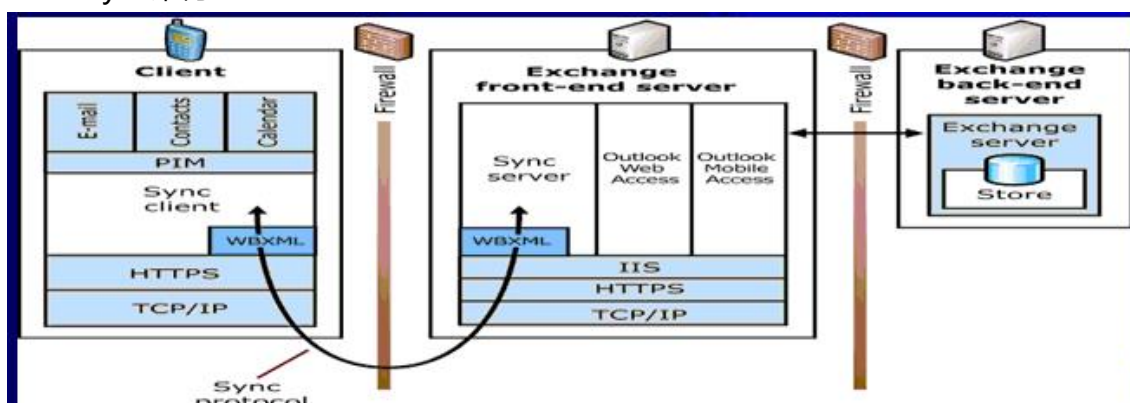数据库进入到备份模式之后，那数据库的碎片整理一定会停止的。不管用什么样的备份软件。所以要把数据库的备份时间和碎片整理时间错开。
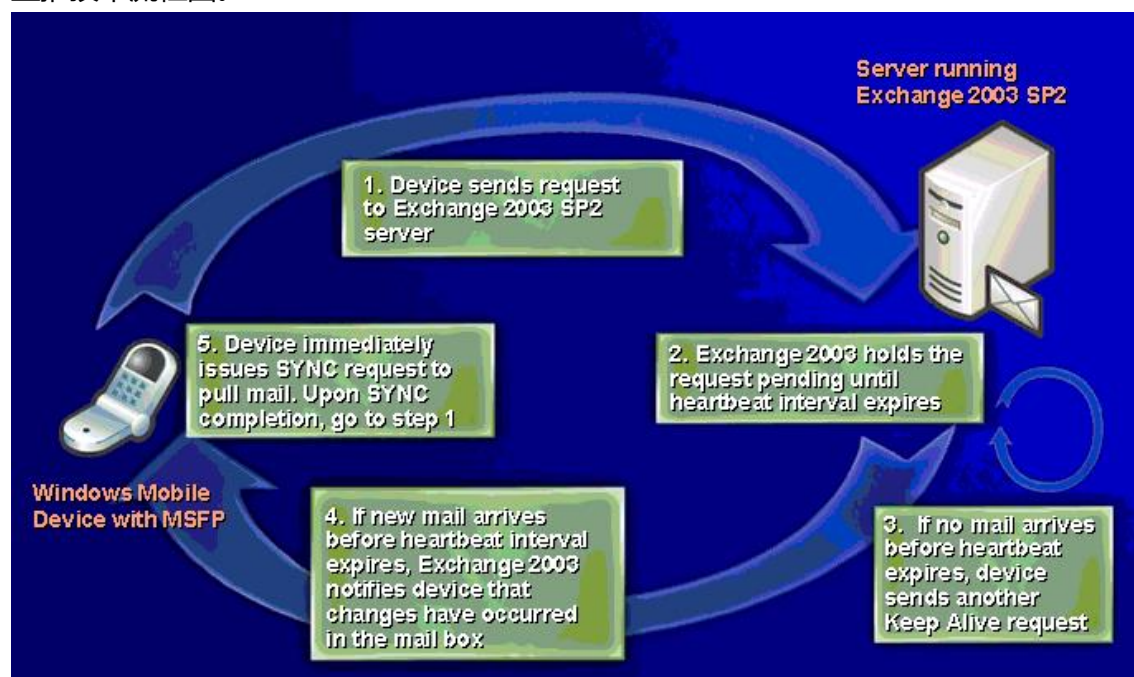

Exchange 2003客户端访问架构图
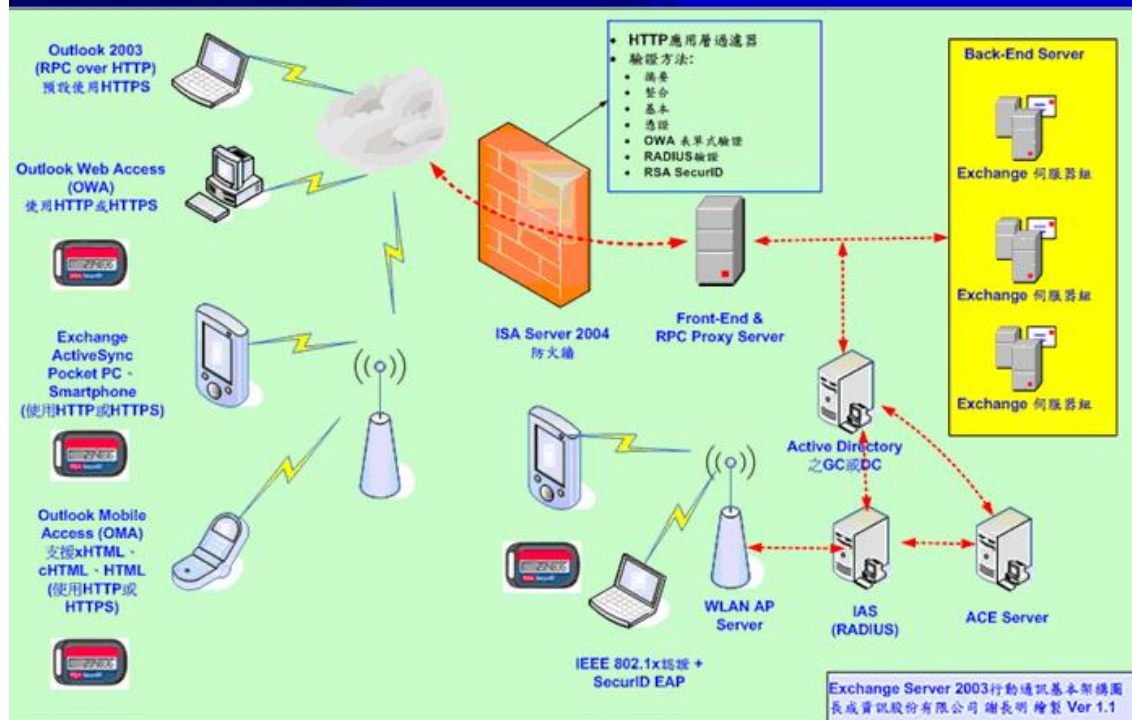
activesync架构。

直推技术流程图。

exchange 2003直推技术配置的地方。

enable up-to-date notifications via SMTP and text messaging

outlook mobile access（OWA）是一个昙花一现的功能，在exchange 2007之后的版本已经被砍掉了。
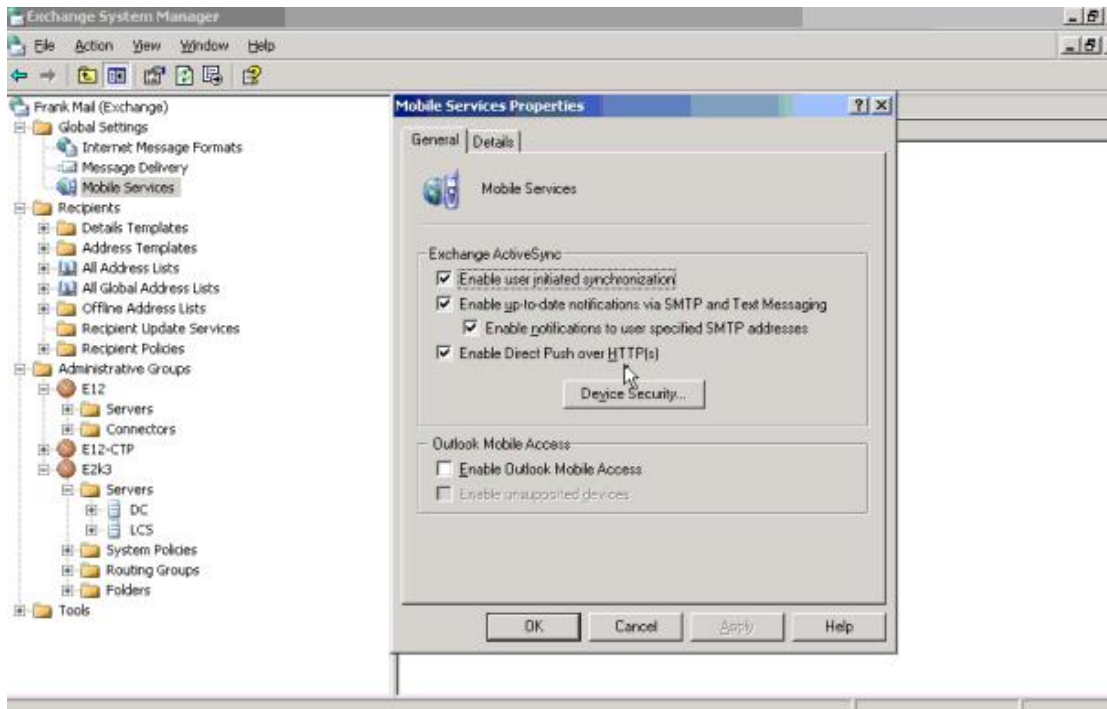
exchange 2007里面取消了管理组的概念，而且路由组的概念被活动目录的站点取代了。

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12Exchange Server白手起家系列之十二：系统SLA和监控流程

SLA是反映一项IT服务的综合指标，不仅仅代表系统的在线时间，更反映了用户对系统的认可程度。

在有限的成本下满足对应的SLA的要求。

SLA可以针对特定的IT服务，也可以针对特定的用户，比如VIP用户和普通用户。

不同的级别对应着不同的投入和成本。

服务级别协议 (SLA) 的结构

- **Service Based - One Service Level Agreement for a specific service for all customers of that service**

- **Customer Based - One Service Level Agreement for a specific customer for all services**

- **Multi-Level**
  - Corporate Level - covering all generic Service Level Management (SLM) issues that would be appropriate for all customers
  - Customer Level - covering all Service Level Management (SLM) issues relevant to a specific customer group for all services used
  - Service Level - covering all Service Level Management (SLM) issues relevant to a specific service for a specific customer group

在项目实施阶段的前期了解用户对SLA的需求。

在实施过程中根据实际的软硬件投入情况进行动态的更新，并及时与客户（用户）进行沟通。

如果项目涉及到第三方的供应商，应在制定SLA之前取得第三方的认可和确认。

如何贯彻SLA

- **服务器端**
  - 服务器配置和部署的规范统一
  - 运营过程中遵循严格的流程
  - 变更管理

- **最终用户**
  - 培训Helpdesk
  - 丰富客户端的功能，增强用户体验

- **整体协调**
  - IT支持部门内部的横向沟通和协调
  - 管理与第三方供应商的关系

- **及时保持与客户(IT主管部门，CIO等)的沟通**

如何衡量SLA：服务器在线时间，客户满意度。
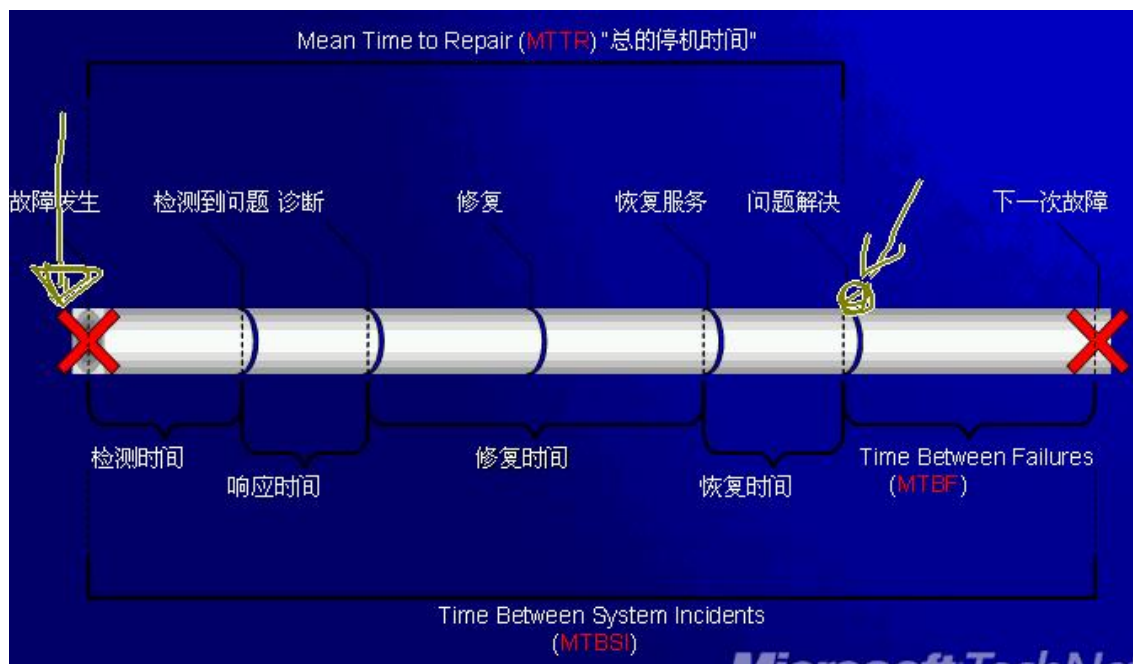
MTTR是指平均的停机时间。

可以通过一些手段来降低停机时间。比如使用监控工具可以降低检测时间。管理员比较高的技术水平或者购买微软的企业级技术支持可以降低响应时间。

对于修复时间，如果是软件问题，那可能诊断时间很长，修复时间很短。如果是硬件问题，可能诊断时间很短，修复时间很长。

一般是把不同的组件的SLA相乘得到一个综合的SLA，比如磁盘、CPU、内存、主板等。

客观的设定用户的期望值。

建立良好的helpdesk流程。

如果是跨国企业，helpdesk流程的一致性非常重要。

用户的dailycheck的列表示例。

性能优化建议

- **Small design changes can reap big benefits**
- **Do not be overly aggressive when tuning, especially when it involves registry changes**
- **Always use the Microsoft Exchange Server Best Practices Analyzer Tool for validation**

在早期架构设计阶段就做好设计和优化是非常关键的。

不要太过于激进地去做优化。

Storage Performance

- **The biggest cause of Exchange performance issues**
  - Usually too few spindles to meet the demand
- **Exchange is I/O hungry**
  - Back of the envelope: 1 spindle for every 100 users
- **Actions to take**
  - Work out your I/O profile
  - Tell your storage vendor how many IOPS you will produce
  - Set caching controllers to 100% write / 4 kilobyte (KB) cache page size
  - Think end-to-end storage (for example, Host Bus Adaptors)
  - Use DiskPar to align tracks (performance boost)
  - Use JetStress to validate your storage architecture
  - Read the paper, "Optimizing Storage in Exchange 2003"

> **! Warning Signs !**
> Average disk latency is greater than 20 milliseconds
> Long disk latency spikes are greater than 50 milliseconds

能够快速的访问AD，网络、网卡速度、针对AD使用专门的服务器。快速的硬盘I/O。

Fast Access to Active Directory

- If Exchange is slow accessing the Active Directory directory service, store performance suffers and mail delivery is slow
- Double check that the Directory Service Access (DSAccess) list only contains local domain controller or global catalog servers
  - Remember that round robin is used
  - Round-trip times should be less than 10 ms
- Rule of thumb
  - You should have one global catalog processor for every four Exchange processors
- Verify that the /3GB switch is being used on global catalogs
  - Increases JET cache from 512 megabytes (MB) to 1 gigabyte (GB)
  - More of the Active Directory is cached in memory

Microsoft TechNet

避免exchange在长时期运行过程中产生内存碎片。

HeapDeCommitFreeBlockThreshold

- Should be set to 0x40000 on all Exchange servers
  - Reduces virtual memory fragmentation by coalescing small free memory regions into larger blocks
  - Especially important for large Exchange mailbox servers – 9582 be gone!
  - http://support.microsoft.com/?id=315407

驱动会在不可分页内存池里面占用一些内存，而不可分页内存的数量是有限的。

Free PTE count性能指标

Hardware Device Drivers

! Red Flags !

Free PTE count less than 5000

- ◆ NonPaged Pool and page table entry (PTE) efficiency
- ◆ Disable unused hardware devices
  - ➢ Especially consider network adapters and storage cards
- ◆ Use identical hardware inside the server
  - ➢ One driver for multiple devices
- ◆ Be especially careful with graphics adapters
  - ➢ Can result in serious PTE reduction
  - ➢ Keep drivers up-to-date
  - ➢ Switch to VGA.SYS driver
- ◆ Need more PTEs?
  - ➢ For Exchange Server 2003, reduce /USERVA to 2970
  - ➢ For Exchange 2000 Server, use SystemPages registry parameter (steal from the Paged Pool)

Microsoft TechNet

客户端outlook的一些插件，可能会对服务器造成负载。

Understand Client Add-Ins

- ◆ Many add-ins to Outlook will dramatically increase the load on the server
  - ➢ Re-calculate IOPS
  - ➢ Use ExMon tool to trace users
    - ➢ www.microsoft.com/exchange/downloads
- ◆ Value-add services such as Blackberry usually require store-level tuning
  - ➢ http://support.microsoft.com/?id=216076
  - ➢ Ensure the latest Collaboration Data Objects (CDO) fixes are deployed