

Veritas Storage Foundation™ 发行说明

Solaris

5.0



Veritas Storage Foundation 发行说明

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Storage Foundation 5.0

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Symantec Corporation
20330 Stevens Creek Blvd.
Cupertino, CA 95014
www.symantec.com

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技术支持

要寻求技术援助，请访问 <http://support.veritas.com>，并选择电话支持或电子邮件支持。使用知识库搜索功能可以访问技术说明 (TechNotes)、产品资讯速递、软件下载、硬件兼容性列表和 Veritas 客户电子邮件通知服务等资源。

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第三方法律声明

Veritas Storage Foundation 发行说明

本文档提供有关 Veritas Storage Foundation 5.0 Solaris（SPARC 平台）产品系列中以下各产品的版本信息：

- Veritas Storage Foundation（Basic、Standard、Standard HA、Enterprise 和 Enterprise HA）
- Veritas Storage Foundation *for Oracle*（Standard、Enterprise 和 HA 版本）
- Veritas Storage Foundation *for DB2*（Standard、Enterprise 和 HA 版本）
- Veritas Storage Foundation *for Sybase*（Standard、Enterprise 和 HA 版本）
- Veritas Volume Manager (VxVM)
- Veritas File System (VxFS)

注意：Veritas Storage Foundation 该版本中未提供 QuickStart。

这些产品中的每种产品都可以用一个许可证密钥激活。安装产品之前，您必须获得许可证密钥。

请参见 《*Veritas Storage Foundation 安装指南*》。

注意：有关与此版本有关的更新、修补程序以及软件问题的最新信息，请参见 Symantec 技术支持网站上的以下技术说明：

<http://support.veritas.com/docs/281987>

要查看硬件兼容性列表 (HCL)，请访问：

<http://support.veritas.com/docs/283161>

要查看硬件技术说明，请访问：

<http://support.veritas.com/docs/283282>

在安装 Veritas Storage Foundation 产品之前，请先通读本文档。

本文档不包含 Veritas Volume Replicator (VVR) 或 Veritas Cluster Server (VCS) 的版本信息。

请参见 《*Veritas Volume Replicator 发行说明*》。

请参见 《*Veritas Cluster Server 发行说明*》。

Storage Foundation 产品套件

下表列出了各个 Veritas 产品以及每个 Storage Foundation 产品套件中提供的可选授权功能。

Storage Foundation 版本	产品和功能
Storage Foundation Basic	Veritas Volume Manager Veritas File System
Storage Foundation Standard	Veritas Volume Manager Veritas File System 可选的授权功能： Veritas Volume Replicator 选件
Storage Foundation Standard HA	Veritas Volume Manager Veritas File System Veritas Cluster Server 可选的授权功能： Veritas Volume Replicator 选件
Storage Foundation Enterprise	Veritas Volume Manager Veritas File System 可选的授权功能： Veritas Volume Replicator 选件
Storage Foundation Enterprise HA	Veritas Volume Manager Veritas File System Veritas Cluster Server 可选的授权功能： Veritas Volume Replicator 选件
Storage Foundation for Oracle Standard	Veritas Storage Foundation for Oracle Veritas Volume Manager Veritas File System Veritas Quick I/O 选件 Veritas Extension for Oracle Disk Manager 选件

Storage Foundation 版本	产品和功能
Storage Foundation for Oracle Enterprise	Veritas Storage Foundation for Oracle Veritas Volume Manager Veritas File System Veritas Quick I/O 选件 Veritas Extension for Oracle Disk Manager 选件 Veritas Storage Checkpoint 选件 Veritas Storage Mapping 选件 可选的授权功能: Veritas Volume Replicator 选件
Storage Foundation for Oracle Enterprise HA	Veritas Storage Foundation for Oracle Veritas Volume Manager Veritas File System Veritas Cluster Server Veritas Quick I/O 选件 Veritas Extension for Oracle Disk Manager 选件 Veritas Storage Checkpoint 选件 Veritas Storage Mapping 选件 可选的授权功能: Veritas Volume Replicator 选件
Storage Foundation for DB2 Standard	Veritas Volume Manager Veritas Storage Foundation for DB2 Veritas File System Veritas Quick I/O 选件
Storage Foundation for DB2 Enterprise	Veritas Storage Foundation for DB2 Veritas Volume Manager Veritas File System Veritas Quick I/O 选件 Veritas Storage Checkpoint 选件 Veritas Storage Mapping 选件 可选的授权功能: Veritas Volume Replicator 选件

Storage Foundation 版本	产品和功能
Storage Foundation for DB2 Enterprise HA	Veritas Storage Foundation for DB2 Veritas Volume Manager Veritas File System Veritas Cluster Server Veritas Quick I/O 选件 Veritas Storage Checkpoint 选件 Veritas Storage Mapping 选件 可选的授权功能： Veritas Volume Replicator 选件
Storage Foundation for Sybase Standard	Veritas Storage Foundation for Sybase Veritas Volume Manager Veritas File System Veritas Quick I/O 选件
Storage Foundation for Sybase Enterprise	Veritas Storage Foundation for Sybase Veritas Volume Manager Veritas File System Veritas Quick I/O 选件 Veritas FastResync 选件 可选的授权功能： Veritas Volume Replicator 选件
Storage Foundation for Sybase Enterprise HA	Veritas Storage Foundation for Sybase Veritas Volume Manager Veritas File System Veritas Cluster Server Veritas Quick I/O 选件 Veritas FastResync 选件 可选的授权功能： Veritas Volume Replicator 选件

产品和功能说明

Veritas Volume Manager

Veritas Volume Manager 是一个存储管理工具，它消除了磁盘存储的物理局限性，您可以使用该工具来联机配置、共享、管理和优化存储 I/O 性能，而不会中断数据的可用性。VxVM 还提供了易于使用的联机存储管理工具，可减少计划内和计划外的停机时间。

VxVM 5.0 许可证

下表显示了 Veritas Volume Manager 5.0 中基本许可证之上的授权级别，以及每个级别支持的功能：

VxVM 许可证	所支持功能的描述
完全	连续、跨越、根目录可置性、重定卷大小、多磁盘组、与本机卷管理器共存、条带化、镜像、镜像的 DRL 日志记录、条带加镜像、镜像加条带、RAID-5、RAID-5 日志、Smartsync（智能同步）、热备用、热重定位、联机数据迁移、联机重布局、卷快照、Intelligent Storage Provisioning、FastResync with Instant Snapshots（带有即时快照的快速重同步）、Storage Expert、设备发现层、多径 DMP 和 VEA。
附加许可证	VxVM 完全许可证的补充功能。

注意：需要有 VxVM 的完全许可证才能有效利用 VxVM 的附加许可证。

若要查看在 VxVM 5.0 中启用的许可证功能，请输入命令：

```
# vxdctl license
```

跨平台数据共享授权

如果跨平台数据共享 (CDS) 磁盘组上次导入到的平台与现在要导入到的平台不相同，那么能否导入该磁盘组是由 CDS 许可证控制的。CDS 许可证包括在 Veritas Storage Foundation 许可证中。

下面是一个 CDS 许可证示例（由 vxlicrep 命令输出）：

```
许可证密钥 = XXXX-XXXX-XXXX-XXXX-XXXX-XXXX
产品名称 = Veritas Storage Foundation
Standard
许可证类型 = DEMO_EXTENSION
OEM ID = 4095
演示版结束日期 = 2005 年 3 月 18 日 00:00:00 星期五
                (从现在起 21.5 天)。
版本产品 = 是

功能: =
VxVM#Veritas Volume Manager = 启用
CPU Count#Veritas Volume Manager = 不限
VXFS#Veritas File System = 启用
CPU Count#Veritas File System = 不限
QLOG#Veritas File System = 启用
PGR#Veritas Volume Manager = 启用
Veritas Foundation Suite = 启用

SPC Lite#Veritas SANPoint Control = 启用
Storage Expert#Veritas Volume Manager = 启用
平台 = 未使用
版本 = 未使用

产品名称 = Veritas Volume Manager
许可证类型 = 演示版
演示版结束日期 =

功能: =
动态 Lun 扩展 = 启用
硬件辅助复制 = 启用
跨平台数据共享 = 启用
PGR = 启用
PGR_TRAINING = 启用
VVS_CONFIG = 启用
[...]
```

Photon 授权

VxVM 在检测到 A5k 阵列时会自动生成一个 Photon 许可证。此外，VxVM 5.0 允许拆下 Photon 设备进行维护，最长为两个星期。为做到这一点，在当前许可证即将过期时，VxVM 将自动删除旧的许可证，并重新颁发一个新的 Photon 许可证，而新许可证将在两个星期后才失效。

这样，您就可以拆下 Photon 设备进行维护，而不会影响其他操作。

如果在这段时间执行许可证查询，将会显示以下信息：

```
许可证密钥 =  
XXXX-XXXX-XXXX-XXXX-XXXX-XXXX-XXXX-XX  
产品名称 = Veritas Volume Manager  
许可证类型 = DEMO_NODE_LOCK  
OEM ID = 4090  
演示版结束日期 = 2002 年 8 月 30 日 01:00:00 星期五 <=====  
失效日期  
(从现在起 13.6 天)。  
节点锁定类型 = (主机 ID 和结构 ID)  
功能: =  
PHOTON = 启用  
CPU 计数 = 不限
```

注意：此消息并不表示 Photon 阵列功能许可证将很快永久失效。在长达 13.6 天的时间里，您仍可以使用与该许可证关联的 VxVM 功能。

Veritas File System

Veritas File System 提供便于您创建和维护文件系统的高性能和联机管理功能。文件系统是组成结构的目录集合，使您可以查找和存储文件。

文件系统的主要用途是：

- 提供对数据存储的共享访问。
- 提供结构化的数据访问。
- 控制数据访问。
- 提供常用的可移植应用程序接口。
- 实现数据存储的易管理性。

用于数据库的 Veritas Storage Foundation

Veritas Storage Foundation *for Oracle*、Veritas Storage Foundation *for DB2* 和 Veritas Storage Foundation *for Sybase* 将 Veritas 的核心产品的长处与特定于数据库的增强功能结合在一起，为数据库提供了无可比拟的性能、可用性和易管理性。每个数据库功能选件的说明如下。

Veritas FlashSnap 选件

在应用于数据库时，Veritas FlashSnap 选件可用于创建和重同步数据库的卷快照以及对其反转重同步。这些快照可在第二台主机上使用。而且，数据库管理员即使没有 root 权限也能执行这些任务。

此选件适用于 Veritas Storage Foundation *for Oracle* 和 Veritas Storage Foundation *for DB2* 的 Enterprise 版本。

Veritas Quick I/O 选件

Veritas Quick I/O 是 Veritas File System 的一种功能，可以提高在 Veritas File System 上构建的数据库的吞吐量。快速 I/O 可将原始设备性能传送到运行于 VxFS 上的数据库，因此既提供使用文件系统的管理优势，又不损害性能。通过利用大量系统内存来有选择地缓冲经常访问的数据，Veritas Cached Quick I/O 进一步增强了数据库的性能。

此选件适用于 Veritas Storage Foundation *for Oracle*、Veritas Storage Foundation *for DB2* 和 Veritas Storage Foundation *for Sybase* 的 Standard 版本和 Enterprise 版本。

Veritas Extension for Oracle Disk Manager 选件

Veritas Extension for Oracle Disk Manager 是专为 Oracle9i 和 10g 设计的定制存储界面。Oracle Disk Manager 可通过包含文件 I/O 高级内核支持的增强型 API 提高系统带宽的性能和易管理性。

此选件适用于 Veritas Storage Foundation *for Oracle* 的 Standard 版本和 Enterprise 版本。

Veritas Storage Checkpoint 选件

通过 Veritas Storage Checkpoint 技术，可以创建文件系统的即时点映像。可以将存储检查点视为像其他任何 VxFS 文件系统一样，可以对其执行创建、装入、卸载和删除操作。

此选件适用于 Veritas Storage Foundation *for Oracle* 和 Veritas Storage Foundation *for DB2* 的 Enterprise 版本。

Veritas Storage Mapping 选件

使用存储映射 (Storage Mapping) 可以将数据文件映射到物理设备上，并显示存储对象 I/O 统计数据。可以显示特定文件的存储对象 I/O 统计数据和存储结构。

此选件适用于 Veritas Storage Foundation *for Oracle* 和 Veritas Storage Foundation *for DB2* 的 Enterprise 版本。

此外，使用 Veritas Storage Foundation *for Oracle*，可以为指定数据库获取映射信息，即哪些表空间位于哪些物理磁盘上。

Veritas Volume Replicator

Veritas Volume Replicator 是一个数据复制软件，旨在通过在一个或多个远程位置维护应用程序数据的一个准确或一致的副本，帮助用户有效地实施灾难恢复计划。

Veritas Cluster Server

Veritas Cluster Server 提供了一个开放系统集群解决方案，可消除计划内和计划外的停机时间，从而便于服务器合并和故障转移，并能有效管理不同环境中的各种应用程序。

新增功能

以下新功能已合并到 Veritas Storage Foundation、Veritas Volume Manager、Veritas File System、Veritas Storage Foundation for Oracle、Veritas Storage Foundation for DB2 和 Veritas Storage Foundation for Sybase 中。

注意：有关 VVR 中的新功能的信息，请参见《*Veritas Volume Replicator 发行说明*》。有关 VCS 中的新功能的信息，请参见《*Veritas Cluster Server 发行说明*》。

Veritas Volume Manager

此 Veritas Volume Manager 版本包括以下新功能和增强功能。

默认的专用区域大小

默认的专用区域大小已从 1MB 增加到 32MB。

注意：不必将现有磁盘组的专用区域大小更改为新的默认值。

磁盘组导入行为已更改

在以前的版本中，如果磁盘组中的某些磁盘不可用或不可访问，则 `vxdg import` 命令将无法导入该磁盘组。在此类情况下，必须指定 `-f` 选项以强制导入该磁盘组。在此版本中，如果在上次成功导入磁盘组时所有可见的磁盘都可以访问，则能够成功导入该磁盘组。由于使用 `-f` 选项强制导入不完整的磁盘组被视为成功的导入，因此以后可以在不指定此选项的情况下导入该磁盘组。

启动时间更短

很大程度上缩短了用来启动 Veritas Volume Manager 配置后台驻留程序 `vxconfigd` 以发现新设备、初始化动态多径处理以及导入磁盘组的时间。

更快的集群节点加入

通过允许并发加入，减少了集群节点加入集群所需的时间。

远程镜像 — 强大的校园集群支持

远程镜像功能保留了校园集群支持（也称为伸展集群）的当前使用模型，在该模型中，一个磁盘组可以跨越多个场所的存储区。增强了 `vxdg` 和 `vxdisk` 等现有实用程序，以实现数据集完整性和保持场所一致性。扩展了镜像的首选读取策略以便在可能的情况下在本地处理读取请求。还提供了一种机制来处理不同场所上的

存储区之间的磁盘组不一致性（序列裂脑情形），以及执行场所故障和恢复的演习测试。

支持 32 个集群节点

VxVM 的集群功能现在最多可支持 32 个节点。

集群中的 SCSI 3 PR 增强功能

删除了禁用路径的密钥以便不会阻碍节点加入。此外，还减少了注册密钥所需的时间。

文件级 SmartSync

VxVM 的 SmartSync 功能现已扩展至支持 Veritas File System 下文件的 Oracle Resilvering。

增强的 DMP

在多个方面增强了动态多径处理 (DMP) 功能：

- **DMP 执行故障检测和恢复的速度加快**
增强了 DMP，允许使用 `vxddmpadm` 命令来调整各个路径上的 I/O 错误修复和 I/O 控制机制。
- **更改 DMP 可调参数**
现在可以通过使用 `vxddmpadm settune` 命令来设置大多数 DMP 可调参数的值。
- **Persistent Group Reservation (PGR) 的重试周期**

供 DMP 利用 A/P 阵列重试 SCSI-3 Persistent Reserve 操作的最高时间周期现在可以通过 `vxddmpadm` 命令的 `dmp_retry_timeout` 参数进行调节。默认值为 120 秒，是 SCSI I/O 超时值的两倍。该参数对 DMP 进行 I/O 处理并无直接影响。

禁用交换机端口会触发光纤的重新配置，这需要一段时间才能稳定。在此期间，尝试通过阵列的辅助路径注册 PGR 字将由于某种出错情形而失败，例如，`unit attention` 或设备重置，或者返回供应商特有的传感数据。重试周期允许光纤重新配置，这通常是一种过渡情形，DMP 并不将其视为出错。

若要显示 `dmp_retry_timeout` 的当前值，请输入以下命令：

```
# vxddmpadm gettune dmp_retry_timeout
```

若要更改 `dmp_retry_timeout` 的当前值，请输入以下命令：

```
# vxddmpadm settune dmp_retry_timeout=value
```

不要把重试周期值设置得过高。否则，会延迟故障转移过程，并导致重试周期期间 I/O 迟缓或者 I/O 活动被抑制。

该参数在《Veritas Volume Manager 管理员指南》或 `vxddmpadm(1M)` 手册页中均无相关说明。

链接的断开快照卷

第三镜像断开快照类型的一个新变体是链接的断开快照卷，它使用 `vxsnap admir` 命令将专门准备的卷与数据卷链接到一起。用于快照的卷的准备方式与用于完整空间即时快照的卷的准备方式相同。但是，与完整空间即时快照不同的是，可以在与数据卷不同的磁盘组中设置该卷。这使链接的断开快照卷特别适用于脱离主机处理应用程序，在使用脱离主机处理应用程序时，您可能希望在与用于数据卷的存储区具有不同特性的存储区上创建快照。

如果更改了卷的大小，也会在同一操作中调整当前链接的任何快照的大小。

卷标记

现在可以使用任意的标记名称和可选的标记值对卷进行标记。一个卷可以与多个标记相关联。远程镜像、存储服务质量 (QoS) 和 Dynamic Storage Tiering (DST) 等功能使用此类标记。

磁盘标记

现在可以使用任意的标记名称和可选的标记值对磁盘进行标记。一个磁盘可以与多个标记相关联。远程镜像、Intelligent Storage Provisioning (ISP) 和导入克隆磁盘等功能使用此类标记。

数据迁移

`vxassist`、`vxevac` 和 `vxsd` 命令已得到增强，使数据可以分别在卷、磁盘或子磁盘级别迁移。一旦数据迁移处于临时状态，便可以提交或取消迁移。

对卷集的组成卷的原始 I/O 访问

提供了一种机制来允许访问卷集的组成卷的原始设备节点。此机制旨在允许单独备份和恢复组成卷。

卷集中的组成卷的最大数量

卷集中的组成卷的最大数量已增加到 2048。

导入克隆磁盘

在 VxVM 环境之外（通常使用专门的硬件）复制的磁盘被称为 *克隆磁盘*。增强了 `vxdisk` 和 `vx dg` 命令，以便能够标识、标记和更轻松地管理此类克隆磁盘。例如，可以在一个操作中同时导入磁盘组中带有相似标记的磁盘子集。

ISP 增强功能

在以下方面增强了 Intelligent Storage Provisioning (ISP) 功能:

- 可以使用 `vxassist` 命令代替 `vxvoladm` 命令来创建 ISP 卷以及非 ISP 卷。任何 `vxassist` 指定属性都被转换为等效的 ISP 规则。
- 可以在一个操作中创建大量的卷，并提高了信息检索的速度。
- 现在可以通过为磁盘和 LUN 分配标记和可选标记值来为存储设备添加批注。
- 可以使用 `vxassist printrules` 或 `vxvoladm printrules` 命令来显示用于为卷分配存储区的原始 ISP 规则集。
- 可以同时创建具有指定意向、且数量指定的卷。
- 提供了额外的信息检索命令来支持如下所述的查询：
 - 给定一个模板，返回引用该模板的所有模板集。
 - 给定一个模板，列出该指定模板依赖的所有模板。
- 链接的断开快照卷功能使 ISP 功能可以通过刷新和恢复等快照操作来支持快速重新同步 (FastResync)。
- 在非 ISP 与 ISP 卷之间迁移。
- ISP 意向版本号已增加到 30。

Veritas File System

此 Veritas File System 版本包括以下新功能。

Dynamic Storage Tiering

Dynamic Storage Tiering (DST) 使多卷 VxFS 文件系统的管理员可以定义放置策略，控制初始文件位置以及在哪些情况下重定位现有文件，从而管理卷集中各个卷上的文件放置。

可用性提高

提高的可用性使您可以装入多卷文件系统，即使纯数据组成卷丢失或不可用也是如此。纯数据卷上的任何 I/O 错误都不会影响对非纯数据卷的访问。此外，不访问丢失的纯数据卷的所有 VxFS 操作都将正常工作。这样可帮助确保某些卷即使在文件系统中的其他卷不可用时也仍然可用。

多卷文件系统支持中的文件-卷映射和卷-文件映射

此版本提供了两个新命令来支持该功能：

- `fsmap` 此命令报告所有数据的卷位置或者与多卷文件系统中的文件关联的间接范围，并根据请求验证 DST 策略是否正在工作。
- `fsvmap` 此命令确定哪个数据文件位于多卷文件系统的给定卷上。当未受保护的卷永久丢失时，此命令仅恢复受影响的文件。

一个卷集中可以有 2048 个卷

一个卷集中允许的卷数量限制从 256 增加到现在的 2048。

文件放置策略管理

`fsppadm` 命令用于管理 DST 功能的文件放置策略，并替代 `fsrpadm`、`fsmove` 和 `fssweep` 命令的功能。

请参见 `fsppadm(1M)` 手册页。

基于模式的分配策略

可以将模式表分配给目录或文件系统。模式表包含一些模式，在指定目录中创建文件时，会根据这些模式将文件名与创建进程的 UID 和 GID 进行匹配。使用第一次成功匹配来设置文件的分配策略。

负载均衡

可以定义具有平衡分配顺序的分配策略，并将其指定给其分配必须在指定卷集中进行随机分发的文件。结果是，如果所有卷都未滿或者没有被禁用，则卷之间的范围分发几乎相同。

并行 I/O 装入选项

`mount` 命令现在支持 `-o cio` 选项，该选项指定装入文件系统以便进行并行读取和写入。该文件系统中的文件上的 I/O 工作方式就像在对这些文件设置了 `VX_CONCURRENT` 缓存顾问的情况下访问文件时那样。

请参见 `mount_vxfs(1M)` 手册页。

vxfsconvert 实用程序

使用 `vxfsconvert` 实用程序时存在一些转换问题。转换文件系统可能会导致 `ENOSPC` 错误。Symantec 建议在使用 `vxfsconvert` 之前升级到 5.0RP1 修补程序。

避免重新组织文件系统

某些应用程序可能要求避免重新组织范围和日志。此类应用程序可以通过创建 `/etc/fs/vxfs/vxfs_noreorg_config` 文件，禁止使用 `fsadm` 命令来重新组织文件系统。

请参见 `fsadm_vxfs(1M)` 手册页。

用于数据库的 Veritas Storage Foundation

Veritas Storage Foundation for Oracle

此 Veritas Storage Foundation *for Oracle* 版本包括以下新功能和增强功能。

支持 10gR2

此 Veritas Storage Foundation *for Oracle* 版本提供对 Oracle 10gR2 的支持。

Database Dynamic Storage Tiering

Veritas Database Dynamic Storage Tiering (DBDST) 使您可以在管理数据时将不常用的数据移动到速度较慢、价格较低的磁盘上，从而可以在速度较快的磁盘上存储经常访问的数据以加快检索速度。

任务计划程序改进

改进了任务计划程序的 GUI，从而提高了计划任务时的灵活性。

修改克隆初始化参数

可以用修改后的初始化参数来创建和启动克隆，使克隆可以通过与主数据库不同的方式来使用系统资源（例如，当克隆位于具有不同资源的次级主机上时，或者虽然位于同一主机上，但应使用较少的资源时）。

深度映射增强

深度映射增强，可以区分出 EMC 阵列的 EMC STD 镜像和 BCV 镜像。使用 `vxstorage_stats` 命令。

表级别映射

现在可以将表名称用作 `dbed_analyzer` 命令的输入（通过新的 `-o` 选项），以列出该表所在的磁盘以及它在每个磁盘上所占用的空间。

Oracle Resilvering 支持

Veritas Extension for Oracle Disk Manager 支持 Oracle Resilvering。存储层利用 Oracle Resilvering 从 Oracle 数据库接收有关在系统崩溃后要重新同步的镜像数据文件的哪些区域或哪些块的信息。

增强的 CLI 命令

以下 Veritas Storage Foundation *for Oracle* CLI 命令增强：

命令名称	描述
<code>dbed_clonedb</code>	添加了新的 <code>-p pfile_modification_file</code> 选项，以便为克隆指定修改后的初始化参数（包含在 <code>pfile_modification_file</code> 中）。
<code>dbed_vmclonedb</code>	添加了新的 <code>-p pfile_modification_file</code> 选项，以便为克隆指定修改后的初始化参数（包含在 <code>pfile_modification_file</code> 中）。
<code>dbed_analyzer</code>	新选项 <code>-o mode=table [-f file -t table]</code> 列出指定表所在的磁盘以及所占用的空间。

Veritas Storage Foundation for DB2

此 Veritas Storage Foundation *for DB2* 版本包括以下新功能和增强功能。

支持 DB2 9.1

此 Veritas Storage Foundation *for DB2* 版本提供对 DB2 9.1 的支持。

Database Dynamic Storage Tiering

Veritas Database Dynamic Storage Tiering (DBDST) 使您可以在管理数据时将不常用的数据移动到速度较慢、价格较低的磁盘上，从而可以在速度较快的磁盘上存储经常访问的数据以加快检索速度。

基于 GUI 的任务计划程序

添加到 GUI 的任务计划程序使您可以轻松灵活地自动创建存储检查点或快照，克隆存储检查点或快照，以及将克隆与数据库重新同步。

深度映射增强

深度映射增强，可以区分出 EMC 阵列的 EMC STD 镜像和 BCV 镜像。使用 `vxstorage_stats` 命令。

新增 CLI 命令

增加了以下的 Veritas Storage Foundation *for DB2* 命令和相应的手册页：

命令名称	描述
<code>edgetmsg2</code>	管理消息日志文件。 此命令无法通过 GUI 使用。

Veritas Storage Foundation for Sybase

此 Veritas Storage Foundation *for Sybase* 版本包括以下新功能和增强功能。

支持 15.0

此 Veritas Storage Foundation *for Sybase* 版本提供对 Sybase ASE 15.0 的支持。

并行 I/O

Veritas 并行 I/O 无需扩展命名空间以及将文件呈现为设备，即可改进 VxFS 文件系统上普通文件的性能。这简化了管理任务，并允许没有顺序读/写要求的关系数据库并行访问文件。要使用 CIO，请将 `cio` 添加到 `mount` 命令或 `vfstab` 条目中。

系统要求

Solaris 操作系统要求

Veritas Storage Foundation 5.0 产品系列在以下 Solaris 操作系统上运行：

Solaris 8（SPARC 平台 32 位和 64 位）

Solaris 9（SPARC 平台 32 位和 64 位）

Solaris 10（SPARC 平台 64 位）

Storage Foundation 会验证目标系统是否正在必要的 Solaris 操作系统版本上运行。如果发现不正确的 Solaris 版本，Storage Foundation 安装将失败。

Solaris 修补程序要求

用于 Veritas Volume Manager 的 Solaris 修补程序

操作系统中可能已安装了一些必需的系统修补程序。您应该检查系统是否已包含需要的修补程序。使用 `showrev -p` 命令可显示系统已包括的修补程序。有关更多信息，请参见 `showrev(1M)` 手册页。

如果尚未安装所需修补程序列表中显示的修补程序，请转到 SunSolve 网站下载这些程序。必须先安装适当的修补程序，然后重新启动。

免责声明：修补程序版本和信息是在产品发布时确定的。若需要最新的修补程序版本和信息，请与您的供应商联系。

操作系统	Sun 修补程序编号或软件包名称	说明
Solaris 9	SUNWscpu 软件包	SUNWscpu 软件包应作为操作系统的一部分一起提供；但如果您没有此软件包，可以从 SunSolve 网站获得。 SUNWscpu 是一个软件包，应当使用 <code>pkgadd</code> 进行安装。
Solaris 8	SUNwsan 软件包（从供应商那里获取） SUNWscpu 软件包 111413-06 （或更高版本）	不管是否已连接 A5x00 驱动器，若要运行 VxVM，就必须安装这些 A5x00 修补程序。 安装 Sun 修补程序 111413 之前，需要安装 SUNwsan 软件包和 Sun 修补程序 109529。然后即可安装 VxVM。这一顺序很重要。 注意： 要获取 SUNwsan 软件包，请转至 SunSolve 网站。您必须是注册用户才能免费下载该软件包。 SUNwsan 和 SUNWscpu 是软件包，应当使用 <code>pkgadd</code> 进行安装。

操作系统	Sun 修补程序编号或软件包名称	说明
	108528-29 (或更高版本)	修补程序 108528-29 需要修补程序 112396-02 (或更高版本)、108987-09 (或更高版本)、111293-01 (或更高版本)、111310-01 (或更高版本) 和 111111-03 (或更高版本)。这些修补程序必须按所列顺序安装。
	108993-18 (或更高版本)	

DMP 与备用路径共存

DMP 与 Sun 备用路径 (AP) 驱动程序的共存不再受支持。要安装或升级 Veritas Storage Foundation 5.0 软件，必须先删除 AP 驱动程序。仅当您在使用 Solaris 8 操作系统时，本说明才适用。

A5x00 设备

无论系统是否连接 A5x00 设备，都必须将第 25 页的“用于 Veritas Volume Manager 的 Solaris 修补程序”中的表内显示的 Solaris 修补程序添加到此 VxVM 版本中。如果系统上连接有 A5x00 设备，则必须安装此修补程序才能使用这些设备；如果系统上未连接 A5x00 设备，VxVM 将使用修补程序来确定是否存在此类设备。

将设备归到 SENA 类别下

仅当安装 VxVM 时系统中存在所需的支持库时，DMP 才将 A5x00 磁盘阵列归到 SENA 类别下。

默认情况下，这些库存在于 Solaris 8 和 9 中。在这些操作系统上不需要安装修补程序。

用于 Veritas Enterprise Administrator 的 Solaris 修补程序

如果您打算使用 Veritas Enterprise Administrator 客户机，则建议您安装 Sun Solaris 软件包 SUNWl1of。SUNWl1of 是 JRE 1.4 必需的软件包。该软件包中包含为支持各种区域设置所需的字体。有关详细信息，请参见 Sun Microsystems Java 网站。

注意：在 Sun 软件包的名称中，小写“i”之后应为数字一（“1”），而不是字母 l。

用于 Veritas File System 的 Solaris 修补程序

在安装 Veritas Storage Foundation 5.0 for Oracle 之前，必须安装以下用于 Veritas File System 的修补程序：

操作系统	Solaris 修补程序编号	说明
Solaris 8	108528-14 (或更高版本)	修补程序 108528-14 需要修补程序 112396-02 (或更高版本)、108987-09 (或更高版本)、111293-04 (或更高版本)、111310-01 (或更高版本) 和 111111-03 (或更高版本)。这些修补程序必须按所列顺序安装。
	108901-04	安装修补程序 108901-04 之前必须安装修补程序 108528-14。

不要使用 Solaris 8 修补程序 110934-10 或 Solaris 9 修补程序 113713-01

Solaris 8 修补程序 110934-10 和 Solaris 9 修补程序 113713-01 使用户无法安装 VCS、VxVM 和 GLM 修补程序。

使用 `showrev -p` 命令可以显示当前安装的修补程序和它们的级别。例如，要查看是否安装了修补程序 110934-10，可输入：

```
# showrev -p | grep 110934
```

如果已安装修补程序 110934-10 (Solaris 8) 或修补程序 113713-01 (Solaris 9)，则必须升级修补程序，或者使用 `patchrm` 命令删除它们：

```
# patchrm 110934-10
```

如果无法从系统中删除该修补程序，系统会显示以下错误信息：

修补程序 110934-10 是在未备份原文件的情况下安装的，因此不能撤除。

如果 Solaris 8 修补程序 110934-10 遇到此问题，请参考编号为 252441 的技术说明，其网址为 <http://support.veritas.com/docs/252441.htm>。

如果 Solaris 9 修补程序 113713-01 遇到此问题，请重命名 `space` 文件，如下所示：

```
# mv /var/sadm/pkg/VRTSvxvm/install/space \
/var/sadm/pkg/VRTSvxvm/install/space.org
```

删除该修补程序后，可以使用 `patchadd` 命令将它替换为经过 Veritas 验证的最新修补程序。

以下修补程序级别已经过验证：

- 110934-14 (Solaris 8)
- 113713-11 (Solaris 9)

要安装最新的修补程序修订版，可使用 `patchadd` 命令，如下所示：

```
# patchadd 110934-14
```

对于 Solaris 8，如果选择不升级到修补程序 110934-14，则可以使用修补程序 110934-08 或更低版本。无论缺少哪个修补程序，您都可以成功安装 Veritas 软件包。

有关用于特定 Veritas 产品的修补程序 110934-10 和 113713-01 的最新情况，请访问 <http://support.veritas.com>。

不要使用修补程序 112964-07

在使用用于数据库的 Veritas Storage Foundation 时，不要使用 Solaris 修补程序 112964-07，否则命令和脚本将无法在 `/tmp` 下创建 `temp` 文件。如果安装了 112964-07，请将此修补程序升级到 112964-08 或更高版本。

Oracle 需要的修补程序

Oracle 错误 4130116 需要的必备修补程序

如果您在运行 Oracle 版本 9.2.0.6 或 9.2.0.7，您必须应用 Oracle 错误 4130116 修补程序。请与 Oracle 联系以获取该修补程序，并了解有关如何应用它的详细信息。

Veritas 修补程序

如果使用安装脚本来安装 Veritas Storage Foundation，系统会自动添加修补程序。但如果选择使用 `pkgadd` 来安装该产品，则需要在安装后手动添加修补程序。必须具有超级用户 (`root`) 权限才能加载 Veritas 软件。

手动安装 Veritas 修补程序

- 1 确保用于安装 Veritas Storage Foundation 的同一张介质光盘位于 DVD 驱动器中并已装入。
- 2 将 `storage_foundation/patches` 目录中的所有修补程序复制到系统上的指定目录中。

```
# cd /working_directory
# cp /cdrom/cdrom0/storage_foundation/patches/* .
```

- 3 解压缩然后展开修补程序。

```
# /cdrom/cdrom0/storage_foundation/scripts \
/install/gunzip *.gz
# tar xvf patch_id1.tar
```

对每个修补程序存档文件重复运行上述的 `tar` 命令。

- 4 使用 `patchadd` 命令分别安装每个修补程序。
`patchadd patch_number`
建议安装所有的修补程序。
- 5 使用 `showrev` 命令验证修补程序的安装情况。
`showrev -p | grep patch_number`

Veritas Volume Manager 和 Veritas Enterprise Administrator 修补程序

有关此版本中包含的修补程序的信息，请参考 `patches` 目录。在软件光盘上，`patches` 目录与 `pkgs` 和 `scripts` 目录位于同一级别：

```
/cdrom/cdrom0/volume_manager/patches
```

Symantec 强烈建议在系统上安装此位置中的所有修补程序。

软件限制

以下各节说明此 Veritas Storage Foundation 软件版本中存在的局限性。

Veritas File System 软件限制

Quick I/O、ODM、mount -o cio 和 VX_CONCURRENT 顾问是相互排斥的

不能在由 Quick I/O 或 ODM 打开的当前处于活动状态的文件上设置 VX_CONCURRENT 顾问。设置了 VX_CONCURRENT 顾问的文件不能同时被 Quick I/O 或 ODM 打开。对于使用 -o cio 装入选项装入的文件系统中的任何文件，不允许进行 Quick I/O 和 ODM 访问。

不支持的非全局区域功能

以下功能不受非全局区域支持：

- 管理 ioctl
- 管理命令
- Veritas Storage Migrator (VSM)
- Virtual File System (VFS)/Veritas Mapping Service (VxMS)
- 快速 I/O 和 CQIO
- Storage Foundation Cluster File System (SFCFS)

启用 ODM 访问

要从非全局区域启用 ODM 访问，必须执行以下操作：

- 1 通过将 /etc/vx/licenses/lic 目录作为一个 lofs 导出到非全局区域，在全局区域中安装许可证。除区域中的其他资源外，另外将以下资源添加到区域配置中，即可完成此操作：

```
# zonecfg -z zone1
add fs
set dir=/etc/vx/licenses/lic
set special=/etc/vx/licenses/lic
set type=lofs
end
```

- 2 在 zonepath/non-global_zone/dev 目录下创建 odm 子目录。可以使用 zonecfg 命令获取给定区域的 zonepath。

- 3 在非全局区域中装入 /dev/odm 目录。
`# mount -F odm /dev/odm /dev/odm`

注意：引导该区域后，ODM 不会自动装入。引导该区域后，使用以上命令装入 ODM。

在非全局区域中装入 VxFS 文件系统

要在非全局区域中装入 VxFS 文件系统，请将 fs 资源类型添加到非全局区域：

```
# zonecfg -z zone1
add fs
set dir=/mnt1
set special=/mnt1
set type=lofs
end
```

dir 的值是非全局区域中的目录，而 *special* 的值是装入非全局区域的全局区域中的目录。

访问并行 I/O 的文件

一个进程可以与其他进程同时读取或写入某个文件。这意味着非全局区域中的一个进程可以与非全局区域或全局区域中的其他进程同时访问该文件。应用程序必须执行以下功能：

```
fd=open(filename, oflag)
ioctl(fd, VX_SETCACHE, VX_CONCURRENT)
write(fd, buff, numofbytes)
```

用于数据库的 Veritas Storage Foundation 软件限制

Oracle、DB2 和 Sybase 软件限制

不支持非全局区域

Veritas Storage Foundation *for Oracle*、Veritas Storage Foundation *for DB2* 和 Veritas Storage Foundation *for Sybase* 的 Standard、Standard HA、Enterprise 和 Enterprise HA 版本都不支持非全局区域。[268530]

不支持 Intelligent Storage Provisioning

Veritas Storage Foundation *for Oracle*、Veritas Storage Foundation *for DB2* 和 Veritas Storage Foundation *for Sybase* 的 Standard、Standard HA、Enterprise 和 Enterprise HA 版本都不支持 Intelligent Storage Provisioning (ISP)。

磁盘布局版本 5 和更早版本在 GUI 中不显示存储检查点配额

在 Veritas Storage Foundation *for Oracle* 和 Veritas Storage Foundation *for DB2* 中，VxFS 磁盘布局版本 5 和更早版本在 GUI 中不显示存储检查点配额。[34432 和 34433]

如果试图在版本 5 或更早版本中使用 GUI 来检索存储检查点的配额信息，则会看到类似下面这样的消息：

```
DBED4646: 错误: 未知的 DBED 错误代码 -30391108 (getquota)
46464....
```

Veritas Storage Foundation for Oracle 软件限制

DBDST 在非英文文件名和放置类名方面的限制

由于在 VxFS Dynamic Storage Tiering 和 VxVM 卷标记方面的限制，DBDST 不能处理非英文数据库文件名或非英文放置类名。VxFS Dynamic Storage Tiering 不支持非英文文件名的放置。VxVM 卷标记功能不支持非英文卷标记名。[599164]

不同的区域设置会导致在 GUI 中生成无法辨认的字符。

GUI 不支持与超级用户具有不同区域设置的 Oracle 用户。如果 SFDB 存储库服务器启动时使用的区域设置与 Oracle 用户（客户机）的区域设置不同，GUI 将显示无法辨认的字符。[605487]

某些功能在 GCO 故障转移之后停止工作

Storage Foundation for Oracle 的某些功能在 Global Cluster (GCO) 故障转移之后无法正常工作。在 5.0 中，Storage Foundation for Database (SFDB) 存储库和工具无法在 Global Cluster 环境中正确管理虚拟主机名。SFDB 存储库在故障转移之后无法正确调整为次级主机。

在故障转移之后，类似存储检查点、Database FlashSnap、计划程序和 Database Dynamic Storage Tiering (DBDST) 的功能将无法正常工作。但是，类似 Oracle Disk Manager (ODM)、Quick I/O 和 Concurrent I/O (CIO) 的功能在故障转移之后将继续工作。此问题将在下一版本中得到解决。[563603]

RAC 安装的限制

不支持在 Veritas Storage Foundation *for Oracle* RAC 之上安装 Veritas Storage Foundation *for Oracle*。[563808]

存储检查点的限制

- 无法使用装入的存储检查点创建克隆数据库。[32726]
- 在从以前的版本升级到 Veritas Storage Foundation 5.0 *for Oracle* 后，必须运行 `dbed_update` 命令。这样做可以回滚到此版本之前创建的存储检查点。[86431]

- 如果使用 `spfile` 选项创建一个 Oracle 实例，必须先运行 `dbed_update` 命令，然后才能成功执行任何存储检查点或 Database FlashSnap 功能。

Veritas Enterprise Administrator 限制

- 在使用 SQL*Plus 配置文件工具更改 `v$table` 列名称后，Veritas Enterprise Administrator (VEA) 不显示表空间信息。[34446]
- VEA 显示的系统字体可能不正确。在日语桌面上，VEA 显示的系统字体可能不正确。在为 VEA GUI 选择非默认字体后，日语字符可能无法正确显示。
- 在基于 PC 的 UNIX 模拟器（例如 Exceed）中显示深度映射拓扑时会有问题。请使用 Windows VEA 客户机，而不是通过模拟器来运行 UNIX VEA 客户机。

Database FlashSnap 的限制

- Database FlashSnap 功能不支持 RAID-5 卷。[34570]
- 在使用 Database FlashSnap 克隆数据库时，Oracle 数据库必须至少有一个强制存档目标，否则 `dbed_vmchecksnap` 会导致此错误信息：
SFORA `dbed_vmchecksnap` 错误 V-81-5677 无法为数据库 PROD 找到有效的强制主存档目标。
请查看 `LOG_ARCHIVE_DEST_n` 参数并检查 `v$archive_dest`。
以下示例显示如何使用 SQL*Plus 来确定强制存档目标：

```
alter system set log_archive_dest_1 =  
'LOCATION=/ora_mnt/oracle/oradata/PROD/archivelogs  
MANDATORY [REOPEN]' [scope=both];
```


有关用于将重做日志存档的 Oracle 参数的更多信息，请参见 Oracle 文档。
[270905]
- 运行 `dbed_vmsnap -o reverse_resync_commit` 后，可以使用 `pfile` 启动主数据库。如果原始的主数据库使用的是 `spfile`，则需要关闭该数据库并使用 `spfile` 重新启动它。然后，运行 `dbed_update` 以更新储存库。

Oracle Disk Manager 的限制

- 若要在非全局区域中运行 Oracle 10g 并使用 Oracle Disk Manager，Oracle 的版本应该为 10.1.0.3 或更高。要使用 Veritas File System 从非全局区域启用 Oracle Disk Manager 文件访问，请按照第 30 页的“启用 ODM 访问”中的步骤执行操作。
- 由于 Oracle Disk Manager 使用快速 I/O 驱动程序来执行异步 I/O，所以不要关闭默认的“快速 I/O”装入选项。

- 不支持在启用 **Cached Quick I/O** 的情况下使用 **Oracle Disk Manager**，这样做会导致系统发生混乱 [34281]。为避免引起系统混乱，请确保以下各项：
 - 如果正在使用 **Oracle Disk Manager**，请不要在文件系统中启用 **Cached Quick I/O**。
 - 如果正在从快速 I/O 向 **Oracle Disk Manager** 转换，则确保禁用 **Cached Quick I/O**。

Veritas Storage Foundation for DB2 软件限制

DBDST 在非英文文件名和放置类名方面的限制

由于在 **VxFS Dynamic Storage Tiering** 和 **VxVM** 卷标记方面的限制，**DBDST** 不能处理非英文数据库文件名或非英文放置类名。**VxFS Dynamic Storage Tiering** 不支持非英文文件名的放置。**VxVM** 卷标记功能不支持非英文卷标记名。[599164]

某些功能在 GCO 故障转移之后停止工作

Storage Foundation for DB2 的某些功能在 **Global Cluster (GCO)** 故障转移之后无法正常工作。在 5.0 中，**Storage Foundation for Database (SFDB)** 存储库和工具无法在 **Global Cluster** 环境中正确管理虚拟主机名。**SFDB** 存储库在故障转移之后无法正确调整为次级主机。

在故障转移之后，类似存储检查点、**Database FlashSnap**、计划程序和 **Database Dynamic Storage Tiering (DBDST)** 的功能将无法正常工作。但是，类似 **Oracle Disk Manager (ODM)**、**Quick I/O** 和 **Concurrent I/O (CIO)** 的功能在故障转移之后将继续工作。此问题将在下一版本中得到解决。[563603]

Veritas Enterprise Administrator 可能无法正确地显示系统字体

在日语桌面上，**VEA** 显示的系统字体可能不正确。在为 **VEA GUI** 选择非默认字体后，日语字符可能无法正确显示。

命令行界面的限制

以下命令不支持多分区数据库 (SMP)：

- `db2ed_clonedb`
- `db2ed_mon`
- `db2ed_vmchecksnap`
- `db2ed_vmclonedb`
- `db2ed_vxdba`

- 以下脚本可以在分区级别运行，但不能在 db2_a11 中运行。这些脚本使用 mkqio 作为输入/输出文件名，因此，该文件将被多个分区覆盖：
 - qio_getdbfiles
例如: export DB2NODE=1; export DB2DATABASE=mydb3;qio_getdbfiles;
 - qio_convertdbfiles
例如: export DB2NODE=1; export DB2DATABASE=mydb3;qio_convertdbfiles;

禁用监视代理

在此 Veritas Storage Foundation 版本中禁用了 GUI 中多分区数据库的监视代理。

配置多个分区之后，必须重新启动 Veritas Enterprise Administrator 服务器

配置一个多分区后，必须停止 VEA 服务器，然后重新启动该服务器。

数据库克隆限制

如果克隆数据库并将其装入，请确保装入点所在的目录属于克隆数据库的实例所有者所有。

如果装入点所在的目录不属于该实例所有者所有，当您尝试删除和卸载克隆数据库时就会显示错误信息。

例如：

```
$ db2ed_clonedb -I inst01 -S prod -T clone -c \  
Checkpoint_1105997700 -m /mnt
```

其中，/mnt 由根目录创建，并且所有者已被更改为 inst01。

当您尝试删除和卸载克隆数据库时，将收到以下错误信息：

```
$ db2ed_clonedb -T clone -o umount -d  
rm: 无法删除目录 /mnt。权限被拒绝
```

此错误信息不会影响 db2ed_clonedb 的功能。当您收到此错误信息时，克隆数据库已被删除和卸载。

为避免此错误，请在 / 下创建一个目录作为根目录，并将该目录的所有者更改为实例所有者。然后，在新建的目录下指定装入点。例如，在 /mnt 下指定装入点，如 /mnt/clone，而不使用上面示例中的装入点 /mnt：

```
$ db2ed_clonedb -I inst01 -S prod -T clone -c \  
Checkpoint_1105997700 -m /mnt/clone
```

注意：如果装入点位于目录 /tmp 下，则不会发生此问题。[285139]

避免通过基于 PC 的 UNIX 模拟器使用 UNIX VEA

在基于 PC 的 UNIX 模拟器（例如 Exceed）中显示深度映射拓扑时会有问题。请使用 Windows VEA 客户机，而不是通过模拟器来运行 UNIX VEA 客户机。

CLI 数据库状态更改在 GUI 中出现延迟

如果使用命令行来启动或停止数据库，GUI 中不会立即显示状态更改。最多可能会延迟 60 分钟。

解决方法：从 GUI 启动或停止数据库，或者在从 CLI 启动或停止之后，从 GUI 执行手动重新扫描。[604685]

不再支持的产品

- Sun Microsystems 已宣布不再支持 Solaris 2.6。有关更多信息，请与 Sun 客户支持部门联系。
- 在 Veritas Storage Foundation 4.1 中，不再支持 Solaris 2.7。
- 在 Veritas Storage Foundation 4.1 中，不再支持 Oracle 8i。在《*Veritas Storage Foundation for Oracle 管理员指南*》中，应该忽略对 Oracle 8i 的任何引用。
- Veritas Storage Foundation 4.1 是支持用于处理原始设备的 Oracle Disk Manager 的最后一个版本。
- Veritas Storage Foundation 4.1 是支持基于文本的 VxDBA 菜单界面的最后一个版本。
- Veritas Storage Foundation 4.0 是支持 GUI 形式的 Veritas Space Capacity Planning 实用程序（用于存储检查点）的最后一个版本。4.1 版本仅支持包含 CLI 的 Veritas Space Capacity Planning 实用程序。
- Veritas Storage Foundation 4.0 是支持制定存储检查点创建计划的最后一个版本。
- 不能装入低于版本 4 的 VxFS 磁盘布局版本。使用 `vxfsconvert` 命令可以将这些版本转换为可以装入的磁盘布局版本。有关详细信息，请参见《*Veritas Storage Foundation 安装指南*》中的 *升级 VxFS 磁盘布局版本* 一节。
- 在下一个主要版本中，将不再支持 VxFS 磁盘布局版本 4 和 5。
- Veritas Storage Foundation 4.1 是支持 VxFS QuickLog 功能的最后一个版本。
- 在 Veritas Storage Foundation 4.1 *for Oracle* 中，不支持由 `vxassist` 命令创建的快照 plex。也不支持 `vxassist` 和 `vxsnap` 创建的快照 plex 组合。

- Veritas Storage Foundation 的下一个版本中可能不支持 `seconly` 装入选项。
- VxVM 不再支持 DMP 与 Sun 备用路径 (AP) 驱动程序的共存。
- 下一个主要版本中将不再支持使用 `upgrade_start` 和 `upgrade_finish` 脚本来升级 VxVM。
- 下一个主要版本中将不再支持 Veritas FlashSnap Agent for Symmetrix (VxFAS)。
- 下一个主要版本中将不再支持快速 I/O 和 Cached Quick I/O。
- 不再可以通过 GUI 来配置阵列。而是使用 `vaildiag` CLI 工具来配置阵列。有关完整的详细信息，请参见 《*Veritas Array Integration Layer Array 配置指南*》。

已解决的问题

Veritas Volume Manager 中已解决的问题

在此 VxFS 版本中，以下问题已得到解决。

问题	描述
140947	在两次重新启动之间不会保留 I/O 策略设置。
229538	同一类型的多个磁盘阵列生成了意外的基于磁盘阵列的名称。
272263	更改磁盘的 I/O 策略会导致 vxconfigd 挂起。
272309	/etc/vx/disk.info 中的记录不完整会导致 vxconfigd 转储内核。
272626	RAID-5 卷与其快照的校验和在某些情况下不一致。
272891	vxnotify 没有收到与 DMP 中控制器状态更改有关的事件。
273314	对处于 SYNC 状态的卷设置 DRL 可能会导致卷的恢复不正确。
273850	无法从 DMX 1000 阵列中的封装根磁盘引导系统。
310784, Sun 错误 ID 6230678	封装跨两个磁盘的引导文件系统生成错误消息。
311530, Sun 错误 ID 6230031	使用较长的名称重命名磁盘阵列会导致 vxconfigd 转储内核。
506139	如果命名机制已更改，则不保留 vxconfigd 的默认参数。

Veritas File System 中已解决的问题

在此 VxFS 版本中，以下问题已得到解决：

问题	描述
498024	vxsvc 在磁盘布局版本 4 升级到版本 6 之后转储内核。
498031	qioadmin 文件设置在重新启动之后不再保留。
506593	dF 针对未装入的块设备报告错误信息。
526434	vxrepquota 在硬性限制和剩余时间值之间缺少一个空格。
526436	具有 O_CREAT 和长文件名的 open() 返回 EIO 错误。

问题	描述
568260	<code>vx_isnfs()</code> 有时会导致混乱。
586928	<code>fcntl()</code> 在集群文件系统中性能较差。

用于数据库的 Veritas Storage Foundation 中已解决的问题

Veritas Storage Foundation for Oracle 中已解决的问题

在此 Veritas Storage Foundation for Oracle 版本中，已经解决了以下问题：

问题	描述
269029	在 Oracle 主目录中未启用 ODM 的情况下，重新扫描过程中不再生成 ODM 警告消息。
534417	以前，在某些本地化环境中不能使用 VEA GUI。此问题已解决。
546921	非根用户（如数据库管理员）现在可以启动 <code>vxdbd</code> 进程。
566275	<code>dbed_vmclonedb -o restartdb</code> 命令现在可以正确地重新启动数据库。

Veritas Storage Foundation for DB2 中已解决的问题

下面是在此 Veritas Storage Foundation for DB2 版本中已解决的问题：

问题	描述
566043	反转重同步 (<code>dbed_vmsnap -o reverse_resync_begin</code>) 在 HA 环境中不再会失败。
564175	“删除克隆数据库” GUI 菜单项现在可以使用。

Veritas Storage Foundation for Sybase 中已解决的问题

以下是在此 Veritas Storage Foundation for Sybase 版本中已解决的问题：

问题	描述
545985	<code>qio_getdbfiles -d</code> 命令现在可以正确地列出指定数据库的信息。

已知问题

Veritas Storage Foundation 中的已知问题

安装 Web Server for SF Host Management 软件包

在日文区域设置中，仅当系统上安装了 VRTSob 软件包 (Veritas Enterprise Administrator) 时才能成功地安装 VRTSobweb 软件包 (Web Server for SF Host Management)。可以使用如下命令来确定是否安装了 VRTSob 软件包。

```
# pkginfo | grep VRTSob  
[633703]
```

许可证软件包没有完全从非全局区域中删除

在最早安装 VRTSvlic 后创建的某个非全局区域中，Veritas 许可证软件包 (VRTSvlic) 中的一些文件可能没有被删掉。如果没有删除所有文件，则会显示错误信息。发生此错误时，请在软件包删除进程结束后，从全局区域中运行以下命令以删除剩余的 VRTSvlic 文件：

```
# rm -rf zonepath/root/var/sadm/pkg/VRTSvlic
```

如果您正在升级一个产品，并且配置了非全局区域，请不要选择安装程序升级过程（或者在命令行中运行脚本），而应分步进行升级，即：先卸载产品，卸载基础结构软件包（`uninstallinfr` 脚本），然后重新安装该产品。

产品安装过程中对 /etc 目录的权限发生更改

由于 Solaris 在 `pkgadd` 命令中的错误，在安装 Symantec 产品软件包的过程中，对 `/etc` 目录的权限可能会发生更改。安装过程结束后，检查是否发生了此问题。使用 `chmod` 命令可重置权限。

DBMS 安全问题

Symantec Shared DBMS 功能创建了以下配置文件：

- `/etc/vxdbms/VERITAS_DBMS3_hostname/conf/databases.conf`
- `/etc/vxdbms/VERITAS_DBMS3_hostname/conf/databases1.conf`
- `/etc/vxdbms/VERITAS_DBMS3_hostname/conf/registration.dat`

这些配置文件分别由 `vxdbms_start_db.pl`、`vxdbms_start-server.pl` 和 `vxdbms_register.pl` 进行创建和修改。

如果文件模式创建掩码没有足够的限制，则任何人都可以写这些文件。Symantec 强烈建议限制根帐户和管理员帐户的默认文件模式创建权限（使用 `umask` 命令），以避免可能的安全问题。具体来说，更改默认 `umask` 中的 `group|world write` 和 `execute` 权限。在最低限制情况下，根用户的默认 `umask` 应该为 `022`。Symantec 建议设置为 `077`。

Veritas Volume Manager 中的已知问题

有关此 VxVM 版本中已知问题的信息，请参见以下各节。

安装和升级问题

ASL 对 Sun StorEdge T3 和 T3+ 阵列的支持

此版本不包括用于支持 Sun StorEdge T3 和 T3+ 阵列的 `libvxpurple.so` 阵列支持库 (ASL)。VxVM 升级为 5.0 时，将删除 `libvxpurple.so` ASL 的任何现有版本。任何 T3 和 T3+ 阵列都必须配置为自动侵入模式，并视为 A/P 类型的 JBOD。5.0 Maintenance Pack 1 版本中将提供用于支持 Sun StorEdge T3 和 T3+ 阵列的 ASL。

如果阵列类型为 A/A-A、A/P 或 A/PF，并且没有合适的 ASL，则阵列必须归为 A/P 类型的 JBOD。这样可以避免发生路径延迟和 I/O 故障。当默认情况下将 JBOD 假定为 A/A 类型，并且 T3 和 T3+ 阵列都不属于该类型，因此您必须为此类阵列创建适当的 JBOD 项。

将 Sun StorEdge T3 或 T3+ 阵列配置为 A/P 类型的 JBOD

- 1 阻止所有应用程序（例如，数据库）访问在阵列上配置的 VxVM 卷，并卸载在阵列上配置的所有的 VxFS 文件系统和检查点。
- 2 将 T3 或 T3+ 阵列配置为自动侵入模式。
- 3 将阵列添加为 A/P 类型的 JBOD:


```
# vxddladm addjbod vid=SUN pid=T300 policy=ap
```
- 4 将 Storage Foundation 或 VxVM 软件升级到 5.0（如果尚未这样做）。在升级过程中，将执行设备发现且阵列将被视为 A/P JBOD。
如果已经将系统升级至 5.0，则运行以下命令以执行设备发现:

```
# vxctl enable
```

- 5 验证已在策略设置为 APdisk 的情况下添加了阵列:

```
# vxddladm listjbod
VID      PID      Opcode Page Code Page Offset SNO length Policy
=====
SUN      T300     18      -1      36      12      APdisk
```

6 检查为阵列列出的正确设备:

```
# vxdisk list
设备 类型 磁盘组 状态
APdisk_0auto:cdsdisk--online invalid
APdisk_1auto:cdsdisk--online invalid
APdisk_2auto:cdsdisk--online invalid
...
```

在实时升级过程中看到的错误信息

运行 `vxlufinish` 脚本以升级 VxVM 时，您可能看到如下所示的错误信息。

```
ld.so.1:vxparms:致命:libc.so.1:找不到 vxparms 文件要求的
“SUNW_1.22”版本
ld.so.1:vxparms:致命:libc.so.1:打开失败:没有这样的文件或目录
VxVM vxparms 错误 V-5-1-0 IPC 失败
```

此类消息是无害的，可以忽略。

初始化以前由 VxVM 控制的磁盘

如果打算初始化磁盘，请检查是否有任何磁盘以前由 VxVM 控制。如果有，而且它们都用在同一主机系统上，则当不按正确的步骤进行删除时，就会导致在安装过程中自动导入包含这些磁盘的磁盘组。安装过程中，如果尝试初始化或封装以前由 VxVM 控制的磁盘，操作将会失败。安装完成后，如若不再需要使用这些磁盘组，可用 `vxpdg` 命令中的 `destroy` 选项删除它们。或者，也可以用 `vxdiskunsetup` 在 VxVM 控制之下删除磁盘。请注意，这些选项使用不当会造成数据丢失。

识别早期版本的简单磁盘

在早期的 VxVM 版本中，某些用户可通过将 `rootdg` 与较小的磁盘分区（这是简单磁盘的特征）关联起来，最大限度地减少为 `rootdg` 磁盘组分配的磁盘。可使用命令 `vxctl add disk` 完成这一过程，但 VxVM 4.0 版本和更高版本不再支持此命令。

如果您创建了其中一种简单磁盘，则需要执行类似于以下示例所述的过程。

假设将简单磁盘定义在 `c1t21d0s7` 上，您会在 `/etc/vx/volboot` 中看到以下条目：

```
disk c1t21d0s7 simple privoffset=1
```

在升级到 VxVM 5.0 后，必须重新启动系统。重新启动后，请执行命令 `vxdisk list`，此时会看到 `c1t21d0s7` 没有列出。这是因为 `vxconfigd` 现在忽略 `/etc/vx/volboot` 中的磁盘条目。

保持对简单磁盘上数据的访问

- 1 定义一个将在 `/etc/vx/darecs` 中创建的磁盘访问记录。
`# vxdisk define c1t21d0s7 type=simple`
 - 2 要求 `vxconfigd` 应该从该磁盘提取信息：
`# vxdctl enable`
 - 3 确定该磁盘所在磁盘组的名称：
`# vxprint -th`
 - 4 启用对该磁盘所在磁盘组（在本例中为 `rootdg`）的访问：
`# vxvol -g rootdg startall`
- [137838]

升级脚本输出的错误信息

如果在 `upgrade_start` 运行时镜像了在 `/etc/vfstab` 中指定的交换卷，则 `upgrade_finish` 脚本将启动对该卷的重同步。这会导致在发出重新启动系统的命令时出现类似下面这样的消息：

```
xvm:vxvol: plex plex_name 的 tutil0 字段被意外更改  
可以忽略此消息。
```

对于 `root` 文件系统包含在镜像卷中的系统而言，`upgrade_start` 脚本可以选择除正常引导磁盘以外的磁盘上的镜像来执行升级。如果发生这种情况，在运行 `upgrade_finish` 后执行的重新启动操作一开始就会失败，并会显示信息，指出引导磁盘上的镜像已失效，如下所示：

```
vxvm:vxconfigd: 错误：系统引导磁盘没有有效的 rootvol plex。请从下列磁盘  
之一引导：  
  
磁盘: *diskname* 设备: *device*  
...  
vxvm:vxconfigd: 错误：系统启动失败  
系统停止。
```

从指定的磁盘之一引导系统。如果 `eeprom` 选项 `use-nvramrc?` 设置为 `true`，请通过指定 `vx-diskname` 来引导系统。

升级中断

在一些升级情形中，如果安装软件在本地系统上被中断，那么 **Veritas Volume Manager** 配置可能在重新启动后丢失。如果出现这种情况，必须重新安装整个 **Veritas Volume Manager** 软件包，并且必须执行手动修复，即重新创建磁盘、磁盘组和卷并从备份中恢复数据。[13033]

控制台上显示“捕获 SIGHUP”消息

如果系统带有使用磁盘阵列命名启用的 SENA 阵列，在此系统上运行 `vxinstall` 时，可能会看到类似下面这样的消息：

```
newmac.veritas.com 控制台登录: Dec 31 00:00:00  
syseventd[59]: 捕获 SIGHUP
```

可以放心地忽略此消息。[Sun 错误 ID 4955989、i138955]

在安装了 VAIL 软件包的系统上生成误导性的警报

在安装了 VAIL 软件包的主机上，如果 SYMCLI 不存在或者未正确安装，那么在以下两种情况下将会生成文本消息为“没有正确安装 SymCLI 命令行工具”的警报。

情况 1：主机重新启动后，发现没有 SYMCLI 或未正确安装。

情况 2：启动 Symmetrix 提供程序的重新扫描并且发现没有 SYMCLI 或未正确安装，但是启动 Symmetrix 提供程序重新扫描之前 SYMCLI 安装是正确的。

在情况 1 或情况 2 中，如果主机上安装了 VAIL 软件包，并且该主机上没有任何托管 EMC Symmetrix 阵列，则应忽略在主机上出现的警报消息。[Sun 错误 ID 6211778、297830]

实用程序问题

不支持非全局区域

Veritas Volume Manager 不支持非全局区域。

全局设备命名

`vxddladm` 命令的全局设备命名 (GDN) 选项应当只能用于 Storage Foundation Volume Server 软件。[608621]

当前命名机制

`vxddladm` 命令中没有用于显示当前命名机制的选项。可以从 `vxdisk list` 命令的输出中推断出正在使用的命名机制。[611320]

为 `vxdmpadm getportids` 命令指定磁盘阵列

`enclosure` 属性应当用于为 `vxdmpadm getportids` 命令指定磁盘阵列名称，而不是《Veritas Volume Manager 管理员指南》和 `vxdmpadm(1M)` 手册页中显示的 `enclr` 属性。

排除设备时 `vxdiskadm` 显示错误 V-5-1-9764

如果通过指定供应商和产品 ID 组合从多径中排除设备，则 `vxdiskadm` 操作会显示错误 V-5-1-9764。此错误是无害的，可以忽略。如果改为指定控制器名或设备名，则不会显示该错误。[587435]

如果专用区域大小不同，则禁用磁盘组

如果使用 `vxvg init` 命令从大小不同的现有专用区域的磁盘组中创建磁盘组，将禁用该磁盘组。如果磁盘以前属于更旧版本的 VxVM 中的磁盘组，则会发生这种情况。

解决方法是在创建磁盘组之前重新初始化磁盘（例如，使用 `vxdisk -f init` 命令），或者在创建磁盘组之后使用 `vxvg adddisk` 命令将磁盘添加到磁盘组中。
[592180]

分割磁盘组之后卷标记丢失

如果从源磁盘组中分割某个磁盘组，分割出来的磁盘组中的卷将不会保留它们的卷标记。必须通过使用 `vxassist settag` 命令重新创建标记。
[605743]

VxVM 卷的最大空间

VxVM 最多支持 256TB 的卷长度。但是，使用 `seek`、`lseek`、`read` 和 `write` 等系统调用的任何 32 位旧应用程序被限制为不能超过操作系统所确定的最大偏移。该值通常为 $2^{31}-1$ 字节（比 2 TB 字节少 1 个字节）。

使用分离的远程 plex 调整卷大小

如果远程镜像配置中的卷在远程站点上具有分离的 plex，则可以使用以下过程调整其大小：

- 1 关闭该卷的 `allsites` 属性：

```
# vxvol -g diskgroup set allsites=off volume
```

- 2 删除分离的 plex：

```
# vxassist -g diskgroup remove mirror volume \  
plexnames=plex1,plex2,...
```

- 3 使用 `vxresize` 命令调整卷大小。

当远程站点恢复时：

- 1 使用远程站点上的存储替换删除的 plex：

```
# vxassist -g diskgroup mirror volume nmirror=N \  
site:remote_site_name
```

- 2 打开该卷的 `allsites` 属性：

```
# vxvol -g diskgroup set allsites=on volume
```

缩小交换卷

`vxassist` 没有用来防止在未先缩小系统认为可用的交换空间之前先缩小交换卷的内在保护机制。如果有必要缩小交换卷，则此操作必须以单用户模式执行，并且必须立即重新启动系统。倘若不采取这些预防措施，系统可能会出现未知行为或被锁定。
[6154]

将日志和镜像添加到卷

当处理如下命令时，`vxassist` 命令不添加镜像和日志：

```
# vxassist mirror volume layout=log ...
```

它将添加镜像，但在没有任何提示的情况下省略日志。若要既添加日志又添加镜像，可使用两个单独的 `vxassist` 调用，如下所示：

```
# vxassist mirror volume ...  
# vxassist addlog volume ...
```

[13488]

替换 `old_layout` 属性

当使用 `vxdisksetup` 命令使磁盘成为 VxVM 控制的磁盘时，不再支持 `old_layout` 属性。改用 `noreserve` 属性。[121258]

使用 `vxvol` 和 `vxmend` 处理分层卷

`vxvol` 和 `vxmend` 命令不能很好地处理分层卷。对顶层卷执行 `vxmend` 命令来改变卷状态时，该命令仅对顶层卷执行；更改不传播到下层的卷。因此，卷状态可能变得不一致，并且随后的 `vxvol init` 命令可能失败。

`vxvol` 命令会出现相同的问题。对顶层卷执行 `vxvol init` 命令时，更改不传播到与它的子卷相对应的卷中。

解决方法：对分层卷执行 `vxvol` 或 `vxmend` 命令时，先按照从低到高的顺序对底层卷执行该命令；然后再对顶层卷执行该命令。

在本例中，卷 `vol` 有两个子卷：`vol-L01` 和 `vol-L02`。首先将卷的状态设置为 `empty`，然后执行初始化命令：

```
# vxmend -o force -g mydg fix empty vol  
# vxmend -o force -g mydg fix empty vol-L01  
# vxmend -o force -g mydg fix empty vol-L02  
# vxvol -g mydg init zero vol  
# vxvol -g mydg init zero vol-L01  
# vxvol -g mydg init zero vol-L02
```

[134932]

增大或缩小分层卷

鉴于目前的分层卷重定大小实现方法的特点，建议在重同步过程中不要增大或缩小分层卷（如条带镜像、连续镜像）。注意此限制不适用于 ISP 分层卷。

VxVM 在实际调整大小之前，会在内部转换分层卷的布局并更新配置数据库。这会导致正在进行的操作（如重同步）失败。

如果系统在分层卷的 `grow` 或 `shrink` 完成前重新启动，则该卷将停留在中间布局状态。在这种情况下，必须使用 `vxassist convert` 将该卷恢复为原来的布局。

重定分层卷的大小后，与子卷关联的卷名、`plex` 名和子磁盘名都会改变。

转换多径处理的磁盘

在 Solaris 10 下，当将容量小于 1TB 的多径处理磁盘从 VTOC 标签转换为 EFI 标签时，必须为每个路径发出 `format -e` 命令。例如，如果某个节点有两个路径（`c1t2d0s2` 和 `c2t2d0s2`），则需要将 `format -e` 命令应用于这两个路径中的每一个。[269566]

控制台上未出现启动脚本消息

在 Solaris 10 中引入了 SMF 支持后，控制台上不会再出现启动脚本消息。

可以在 SMF 日志文件中查看这些消息（`cat` 或 `vi`），SMF 日志文件的位置是：

```
/var/svc/log  
/etc/svc/volatile
```

文件名与特定的启动脚本有关：

```
#!/var/svc/log:ls  
system-vxvm-vxvm-startup2:default.log  
system-vxvm-vxvm-sysboot:default.log
```

另外，还可以在以下位置找到其他启动消息：

```
#!/var/svc/log:ls  
milestone-multi-user-server:default.log  
milestone-multi-user:default.log  
milestone-name-services:default.log  
milestone-single-user:default.log  
  
#!/etc/svc/volatile  
  
system-vxvm-vxvm-startup2:default.log  
system-vxvm-vxvm-sysboot:default.log
```

[269949]

坏磁盘块警告

当 `vxio` 在磁盘上检测到错误的磁盘块时，它会显示一条警告消息，指出遇到了不可纠正的写错误。[272176]

不要在 `/etc/vx/disks.exclude` 文件中指定长设备名称

建议不要直接编辑 `/etc/vx/disks.exclude` 文件。如果在此文件中指定了长设备名称，某些脚本（如 `vxdiskadm`）将失败并出现错误信息。应改用 `vxdiskadm` 命令的 17 或 18 选项在 VxVM 视图中隐藏或显示设备。[Sun 错误 ID 6228464、311275]

没有引导磁盘组的 **bootdg** 链接，无法引导系统

系统可能无法启动，并出现以下错误：

```
错误: svc:/system/filesystem/root: 默认值无法装入 /usr
(有关详细信息, 请参见 “svcs -x”)
[ system/filesystem/root: 默认值致命失败 (有关详细信息,
请参见 “svcs -x”) ]
请求系统维护模式
(有关更多信息, 请参见 /lib/svc/share/README。)
控制台登录服务无法运行
```

用于系统维护的根口令 (control-d to bypass):
分配给 /dev/console 的单用户权限
进入系统维护模式

```
Feb 14 23:41:26 su:/dev/console 上的根 “su root” 成功
su: 没有 shell /bin/ksh。正试图撤回 shell /sbin/sh。
-sh: /bin/i386: 未找到
-sh: /usr/sbin/quotatool: 未找到
-sh: /bin/cat: 未找到
-sh: /bin/mail: 未找到
-sh: -o: 错误选项
```

出现此错误的一个可能的原因是，在 /dev/vx/dsk 或 /dev/vx/rdsk 下面缺少 bootdg 与引导磁盘组之间的符号链接。

此错误的解决方法说明如下：

- 1 确保系统在 /dev/vx/dsk 和 /dev/vx/rdsk 下面没有链接
bootdg -> rootdg
- 2 从 CDROM 或网络引导系统。
- 3 在 CDROM 中装入 /。在此示例中，cxtxdxs0 是引导磁盘。
mount -F ufs -o nologging /dev/dsk/cxtxdxs0 /mnt
- 4 创建链接。此示例假设引导磁盘组的名称为 rootdg:
cd /mnt/dev/vx/dsk
ln -s rootdg bootdg
cd /mnt/dev/vx/rdsk
ln -s rootdg bootdg
cd
umount /mnt
init 0
- 5 重新启动系统。

[Sun 错误 ID 6230224]

设备问题

失效设备条目降低了 VxVM 的速度

在 Solaris 10 中，`/dev/[r]dsk` 目录中的失效设备条目会导致 VxVM 配置后台驻留程序 `vxconfigd` 消耗大量 CPU 时间。通过输入以下命令序列删除失效条目：

```
# devfsadm -C
# touch /reconfigure
# init 6
```

新添加的磁盘应带有标签

在将新磁盘添加到 Solaris 配置中时，应在将这些磁盘用于 VxVM 之前为其添加标签。VxVM 可以发现不带标签的磁盘，但无法读取其磁盘几何结构，也无法初始化这些磁盘。对于每个不带标签的磁盘，将显示类似于以下内容的控制台消息：

```
警告: /pci@1e,600000/SUNW,qlc@3,1/fp@0,0/ssd@w22110002ac000266,0
(ssd18): 标签损坏: 幻数错误
```

当 VxVM 发现不带标签的磁盘时，会将该磁盘的配置信息添加到 DMP 中。如果 DMP 尝试打开不带标签的磁盘，则打开将失败并且会禁用路径。如果随后使用不带标签的磁盘重新启动了系统，则也会为不带标签的磁盘显示 DMP 禁用路径消息。

为防止在引导时出现不必要的延迟，建议您在 VxVM 发现并初始化新磁盘之前使用 `format` 命令为其添加标签。[544797]

vxddladm addsupport 命令的限制

使用 Sun SCSI Enclosure Service (SES) 驱动程序时，`vxddladm addsupport` 命令可能会导致系统挂起。此情况可能是由 `/dev/es` 中的失效条目引起的。失效条目是 `/dev/es` 中的设备链接，该链接没有对应的设备连接到系统。

在某些情况下，安装 VxVM 会导致系统挂起，因为 `vxddladm addsupport` 命令也在运行。

如果系统挂起，请采用以下解决方法：

- 1 重新启动系统。
- 2 从 `/dev/es` 中删除所有失效的和有效的条目。
- 3 运行 `devfsadm` 命令，使用有效的条目重新创建 `/dev/es`：

```
# devfsadm -C
```
- 4 重新安装 Veritas 软件。

[115323, 140441]

磁盘控制器固件升级

要解决 Sun 错误 ID 4164338，请使用《*VERITAS Volume Manager 管理员指南*》的“管理动态多径处理 (DMP)”一章中“升级磁盘控制器固件”中介绍的过程。

在 Solaris 9 上升级 T3B 固件

(仅限 Solaris 9) 要将 T3B 升级到固件版本 2.1, 必须按以下过程操作。不按此过程操作可能会导致禁用磁盘组, 或无法装入文件系统。(i95877)

- 1 使用 `umount` 命令卸载相关的文件系统。
`# umount mount_point`
- 2 停止所有 VxVM 卷:
`# vxvol -g dg_name stopall`
- 3 停止 VxVM:
`# vxdctl stop`
`# vxiod -f set 0`
- 4 将 T3B 固件升级到版本 2.1。
- 5 启动 VxVM:
`# vxiod set 10`
`# configd -m disable`
`# vxdctl enable`
- 6 启动 VxVM 卷:
`# vxvol -g dg_name start vol_name`
- 7 使用 `mount` 命令重新装入文件系统, 例如:
`# mount -F vxfs /h/filesys`

事件源后台驻留程序终止

如果在 Brocade 交换机上禁用然后启用了主机端交换机端口, 则在未对系统应用 SUNWfchba、SUNWfchbr 和 SUNWfchbx 软件包的最新 Solaris 修补程序的情况下, 事件源后台驻留程序 (vxesd) 将终止。对于 Solaris 8 或 9, 需要 SAN Foundation 工具包 4.4.7 或更高版本。对于 Solaris 10, 请安装推荐的最新修补程序集群。[534392]

处于“主动/主动”模式的 Hitachi 阵列

将 Hitachi DF400、DF500、HDS9200 或 HDS9700 阵列配置为“主动/主动”模式阵列后, 性能将下降。必须安装正确的 ASL 才能使这些阵列被归类为 A/PG 类型阵列。[73154]

根磁盘卷的重布局

不要运行 `vxrelayout` 和 `vxassist` 命令对根磁盘中的卷进行重布局。此操作可能损坏根磁盘的布局, 导致无法从根磁盘引导。在封装的根磁盘上, 重布局操作可能会导致升级失败。[103991]

无法从 T3 阵列添加磁盘

在 T3 阵列上尝试添加磁盘（通常使用 `vxinstall` 或 `vxdisksetup`）时，VxVM 可能会显示以下错误信息：

```
vxvm:vxdisk: 错误: 设备 XXXX: 联机失败  
设备路径无效
```

如果在添加一个或多个磁盘之前对 T3 磁盘进行重新分区（或重新格式化），可能会出现此问题。[105173]

HDS9200 阵列不支持带 I/O 防护功能的 SFCFS

如果尝试引导启用了 I/O 防护功能 (PGR) 的集群，则从属节点上的 HDS9200 磁盘将显示为错误状态。如果禁用 I/O 防护功能，则不会出现此错误信息。[131926]

V480 和 V880 内部磁盘阵列中的磁盘

V480 和 V880 内部磁盘阵列中的 Fujitsu 和 Hitachi 磁盘可能不会被自动识别为 JBOD 磁盘。如果多径处理配置不当，此问题会导致损坏数据。在安装 Sun 认证的所有 FC 磁盘（作为 FRU 替换设备）之后，按照《Veritas Volume Manager 管理员指南》“管理磁盘”一章中“将不受支持的磁盘阵列添加到 DISKS 类别”部分中的所述过程将每个这样的磁盘添加到 JBOD 类别下。必须指定每个磁盘的供应商 ID 和产品 ID，以免与其他阵列中的类似磁盘发生冲突，这一点很重要。对于 Fujitsu 磁盘，还必须指定序列号的字符数。[Sun 错误 ID 4900508、i133579]

封装专用区域空间不够的磁盘

如果磁盘上的空间不够，无法为磁盘上的数据库副本分配空间，则不能封装该磁盘。数据库所需的空间至少与分配给同一磁盘组中其他磁盘的空间一样大。所需的默认大小为 32MB。要解决此问题，可将磁盘最后一个分区的数据放到其他磁盘的卷上，然后将该分区大小减少到 0，以便释放空间。

用户必须在磁盘首尾两端为数据库分配空间，根磁盘是个例外。如果根磁盘的开始或结尾位置没有空间，可以从交换分区腾出一些空间，这样就可以封装根磁盘了。具体做法是在从交换分区划出的空间中为专用分区创建一个子磁盘。

解决方法：对于磁盘上没有足够的空间来存储 VxVM 专用信息的问题，目前还没有解决方法。VxVM 要求至少提供一小块专用存储区以便能够正确标识磁盘。一个磁盘组中可以配置的 VxVM 对象的数量几乎与专用区域的大小成正比。默认专用区域大小为 32MB。如果此大小被改写，则建议使其不小于 1MB。

使用 JNI 卡时的错误

如果 JNI 卡的型号是 FCE-1063、FCE2-1063、FCE-6410、FCE2-6410 和 FCE2-6412 中的一种，则可能会遇到以下错误信息：

```
Oct 22 00:16:16 ds13un jnic: [ID 847178 kern.notice] jnic1: 检测到内存  
端口奇偶校验错误  
Oct 22 00:16:16 ds13un jnic: [ID 229844 kern.notice] jnic1: 链接中断  
Oct 22 00:16:16 ds13un jnic: [ID 744007 kern.notice] jnic1: Target0:  
端口  
0000EF (WWN 500060E802778702:500060E802778702) 脱机。  
Oct 22 00:16:18 ds13un jnic: [ID 709123 kern.notice] jnic1: 链接正常  
Oct 22 00:16:18 ds13un jnic: [ID 236572 kern.notice] jnic1: Target0:  
端口  
0000EF (WWN 500060E802778702:500060E802778702) 联机。  
Oct 22 00:16:18 ds13un jnic: [ID 229844 kern.notice] jni  
有关更多信息，请与 JNI 支持部门联系。
```

解决方法：将以下参数添加到 JNI 配置文件 (jnic.conf) 中：

```
FcEnableContextSwitch = 1;
```

Sun StorEdge Traffic Manager (SSTM)

不支持通过 SAN 4.3 或更高版本获得的 Sun StorEdge Traffic Manager (SSTM) 引导支持功能。也不支持从 SSTM 下的光纤设备引导或对 SSTM 下的光纤设备进行引导封装。

[Sun 错误 ID 4912232、4909641、4912667]。

3510 阵列中的磁盘空间丢失

如果大于 512GB 的 3510 阵列磁盘被初始化为 CDS 磁盘，则由 SCSI 模式检测命令返回的每磁道扇区数量值可能不正确。这样会导致误算扇区计数，并且会丢失某些磁盘空间。[272241]

Hitachi 9990 Genesis 阵列

安装 Storage Foundation 软件之后，控制台中可能显示类似于以下内容的错误。

```
d18b-root@[/usr/sbin] >d18b-root@[/usr/sbin] >get_geometry_info_c  
ommon:solaris 磁盘标签 adj. 对于 /dev/vx/rdmp//GENESIS0_6 失败 (错  
误 22) get_geometry_info_common:solaris 磁盘标签 adj. 对于  
/dev/vx/rdmp//GENESIS0_6 失败 (错误 22)  
get_geometry_info_common:solaris 磁盘标签 adj. 对于  
/dev/vx/rdmp//GENESIS0_6 失败 (错误 22)  
get_geometry_info_common:solaris 磁盘标签 adj. 对于  
/dev/vx/rdmp//GENESIS0_6 失败 (错误 22)  
get_geometry_info_common:solaris 磁盘标签 adj. 对于  
/dev/vx/rdmp//GENESIS0_6 失败 (错误 22)  
get_geometry_info_common:solaris 磁盘标签 adj. 对于  
dev/vx/rdmp//GENESIS0_6 失败 (错误 22)
```

在 `vxconfigd` 未正确处理磁盘几何结构数据的 Hitachi 9990 (Genesis) 阵列上，可以观察到此失败，导致在 `vxctl enable` 或 `vxconfigd` 启动过程中出现所指示的信息。此消息不影响 VxVM 使用阵列。[Sun 错误 ID 6221005、301931、308975]

在发现 IDE 设备时显示的错误信息

当归类内部智能驱动器电子 (IDE) 设备时，VxVM 试图使用 `scsi` 命令获取设备的几何结构数据，从而导致显示以下错误消息：

```
get_geometry_info_common:/dev/vx/rdmp//c0t0d0 fmt_page_code
failed. ret 0x19
```

由于未丢失数据且 VxVM 正确归类了设备，因此可以忽略这些消息。[Sun 错误 ID 6222054、308336]

启用了 TrueCopy 的 HDS 上的 S-VOL 设备

当使用启用了 True Copy 的 HDS 时，可以在 `vxdisk list` 输出中看到主要设备 (P-VOL) 及其镜像 (S-VOL 设备)。P-VOL 设备可用于导入，但 S-VOL 设备不能用于导入。即使 `vxdisk list` 输出中显示了 S-VOL 设备，也不要尝试使用它们。[300979]

热重定位问题

热重定位对性能的影响

除了 `rootvol` 和 `swapvol` 以外，热重定位功能不能保证重定位后的数据布局或性能保持不变。因此，可能会出现这种情况，即重定位之前的单个子磁盘在重定位后可能被拆分到不同磁盘的两个或更多的子磁盘上（如果单个磁盘没有足够的连续空间容纳该子磁盘）。[14894]

通知消息中的磁盘信息

发生磁盘故障时，热重定位功能会通过电子邮件将故障情况和所有重定位尝试通知系统管理员。这些邮件通常包含有关受故障影响的设备偏移和磁盘访问名称的信息。但是，如果磁盘彻底失败或关闭，则邮件中不会包括磁盘访问名称和设备偏移信息。这是因为 VxVM 无法再访问此信息。[14895]

DMP 问题

路径上的 I/O 未恢复

如果在故障回复或非破坏性升级 (NDU) 操作之后重新启用了路径，则该路径上的 I/O 可能不会恢复。要解除对路径上的 I/O 的障碍，请运行 `vxdisk scandisks` 命令。[617331]

DMP 获取不正确的序列号

如果设备的 LUN 序列号包含逗号 (,)，DMP 将无法获取该设备的正确序列号。具有 8096 个以上 LUN 的 EMC Symmetrix 阵列中即存在该问题。[611333]

禁用交换机端口会导致 I/O 故障

禁用 A/P 阵列的次级路径上的交换机端口会导致主路径上的 I/O 故障。这是由于重新配置光纤要花费一些时间来稳定，具体时间多少取决于 SAN 光纤的复杂程度。运行 `vxdisk scandisks` 命令可以将主路径返回到启用状态。[607996]

使用 A/PF 阵列的镜像失败

如果设备发现层选择到 A/PF 阵列中的设备的次级路径，则通过使用 `vxdiskadm` 命令的选项 6 来镜像卷将失败。此问题没有已知的解决方法。[603164]

事件源后台驻留程序可以转储内核

在极少情况下，事件源后台驻留程序 (`vxesd`) 可以生成内核转储。[593076]

默认 I/O 策略

主动/主动 (A/A) 阵列的默认 I/O 策略已从 `balanced` 更改为 `minimumq`。非对称主动/主动 (A/A-A) 和主动/被动 (A/P) 阵列的默认 I/O 策略已从 `singleactive` 更改为 `round-robin`。

集群功能问题

无法分离出错的 plex

如果集群分离策略设置为全局，当非镜像卷遇到磁盘介质故障时，磁盘不会显示为出错，并且不会禁用卷。但是，I/O 请求会失败。[521182]

节点重新加入导致 A/P 阵列发生 I/O 故障

在下列情况下不应将单个集群节点重新加入集群：对 A/P 阵列同时启用了主路径和次级路径，但其他所有节点仅使用次级路径。这是由于加入节点在加入发生之前未获得任何集群配置信息，并且尝试使用 I/O 的主路径。其结果是，其他集群节点会遇到 I/O 故障并退出该集群。

解决方法：

- 1 在将节点加入到集群中之前，断开与该节点和阵列之间的主路径相对应的电缆。
- 2 通过使用以下命令确认该节点已加入集群：

```
# vxclustadm nidmap
```

此命令的输出应显示该节点的一个条目。

- 3 断开与该节点和阵列之间的主路径相对应的电缆。

4 使用以下命令触发集群范围的故障回复：

```
# vxdisk scandisks
```

现在所有节点都应使用主路径。

[579536]

卷持续处于 SYNC 状态

如果在将 plex 挂接到卷时节点脱离了集群，则该卷可能永远停留在 SYNC 状态。要避免这种情况，可在 plex 挂接完成后，使用以下命令手动重同步卷：

```
# vxvol -f resync volume
```

[Sun 错误 ID 4087612；20448]

RAID-5 卷

VxVM 在集群共享磁盘组中不支持 RAID-5 卷。

集群共享磁盘组支持的文件系统

在集群共享磁盘组内的卷上使用 Veritas Storage Foundation Cluster File System (SFCFS) 以外的文件系统会导致系统死锁。

集群共享磁盘组信息的可靠性

如果在主节点和从属节点上都停止了 vxconfigd 程序，然后先在从属节点上重新启动该程序，那么在主节点上启动 vxconfigd 程序并重新连接从属节点（可能需要大约 30 秒）之前，VxVM 的输出和 VEA 的显示不可靠。具体说来，在此期间，共享磁盘组被标记为 disabled，并且没有关于这些磁盘组的信息。因此，必须先在主节点上启动 vxconfigd 程序。

打开的卷设备所引发的消息

从集群终止节点后，如果不关闭在共享磁盘组（其 I/O 处于不活动状态）上打开的卷设备，这些卷将不会被删除。此后在卷保持打开的情况下将此节点作为主节点加入集群时，这些卷的存在不会导致出问题。但是，如果尝试将此节点作为从属节点再次加入集群，操作可能失败并显示以下错误信息：

```
无法分配次要编号
```

与此消息同时显示的还有控制台消息：

```
警告：次要编号为 ### 的磁盘组 group 已被使用
```

远程镜像问题

卷重布局

在该版本中，对于场所范围内的卷或与场所一致的卷不支持卷重布局。[528677]

在卷上设置场所一致性

除非首先为磁盘组设置了场所和场所一致性，否则不能使用 `vxvol` 命令在卷上设置场所一致性。[530484]

添加远程镜像

将远程镜像添加到与场所一致的卷的新场所上不会也在该场所上创建 DRL 日志 `plex` 或 `DCO plex`。解决方法是在指定场所 (`site=sitename`) 上使用 `vxassist addlog` 命令添加 DRL 日志 `plex`，或使用 `vxsnap` 命令添加版本 20 的 `DCO plex`。[533208]

更换出错的磁盘

在出错磁盘的场所已分离时，不能替换该磁盘。必须通过运行以下命令，先重新挂接场所并恢复磁盘组：

```
# vxdg -g diskgroup reattachsite sitename
# vxrecover -g diskgroup
```

在替换设置了 `site` 标记的磁盘时，`vxdiskadm` 命令给出错误。在替换此类故障磁盘之前，请使用以下命令在替换磁盘上设置正确的场所名称：

```
# vxdisk -f init disk
# vxdisk settag disk site=sitename
```

[536853, 536881]

重新挂接场所

当磁盘处于序列裂脑状况时，如果未指定 `-o overridesb` 选项，重新挂接场所将给出类似如下的错误信息：

```
VxVM vxdg 错误 V-5-1-10127 分离 sitename: 磁盘组中无记录
```

使用以下命令来重新挂接场所并恢复磁盘组：

```
# vxdg -g diskgroup -o overridesb reattachsite sitename
# vxrecover -g diskgroup
```

[540351]

磁盘组分割、移动或结合期间并不传播场所记录

包含任何场所范围卷的源磁盘组上的分割、移动或结合操作失败。这是因为执行此类操作期间不能将场所记录传播至目标磁盘组。

由于磁盘组分割、结合或移动操作失败，系统将显示以下其中一条消息：

有些卷的 `allsites` 标志在场所 `sitename` 上不含 `plex`。请使用 `-f` 标志来移动在所有此类卷上均将 `allsites` 标志关闭的卷。

带 `allsites` 标志的卷正被移动到不含任何场所记录的目标磁盘组上。请使用 `-f` 标志来添加在所有此类卷上均将 `allsites` 标志关闭的卷。

建议的解决办法是确保在磁盘组之间移动的每个卷上都设置了 `allsites=off`:

- 1 在要移动、分割或结合的每个卷上运行如下命令以查明是否其中任意卷上设置了 `allsites=on`。

```
# vxprint -g diskgroup -F %allsites volume
```

- 2 在上一步骤中发现设置了 `allsites=on` 的每个卷上运行如下命令。

```
# vxvol -g diskgroup set allsites=off volume
```

- 3 继续进行磁盘组的分割、结合或移动操作。

[563524]

恢复场所记录

`vxmake` 命令可以用来重新创建磁盘组配置，但不能用来恢复场所记录。在恢复磁盘组配置之后，请使用如下命令手动重新创建场所记录：

```
# vxdg -g diskgroup addsite site
```

[584200]

快照和快照合并问题

将快照用作根磁盘

建议不要将根卷的快照用作可引导卷。可以制作快照来保留根卷的数据，但快照将不可引导。必须先将快照中的数据恢复到原始根卷才能使用保留的数据引导系统。

创建 SFCFS 文件系统的快照时显示的警告信息

创建 SFCFS 文件系统的快照时，可能会出现以下警告消息：

```
vxio: 警告: vxvm:vxio: Plex plex 已从卷 vol 分离
```

解决方法：不需要执行任何操作。此现象属正常情况，不是因出错所致。

快照的文件系统检查

通常情况下，文件系统在用户创建快照时不做任何事情。但是，如果未装入 CFS 文件系统，则快照的 `fsck` 所需的时间很可能比通常情况下要长，具体取决于创建快照时的 I/O 活动。

解决方法：当创建 CFS 文件系统的快照时，应确保至少将命令行中定义的一个卷装到 CVM 主节点上。

装入操作可能导致快照之间产生不一致的情况

如果在装入某个卷中的文件系统的同时对该卷执行快照管理操作，则即时点副本中会出现不一致。

优化空间快照创建失败

如果卷上有大量活动 I/O，使用 `vxsnap make` 命令来创建卷的优化空间快照将会失败。显示如下错误：

```
VxVM vxassist 错误 V-5-1-10127 获取子磁盘 subdisk 的关联：磁盘组中  
无记录
```

如果在创建快照过程中 I/O 挂起，则命令成功。[606613]

卷集中的缓存卷

不要向卷集中添加（供优化空间即时快照使用的）缓存卷。这将导致数据损坏和系统混乱。

[614061, 614787]

Intelligent Storage Provisioning 的问题

创建应用卷

若要成功创建应用卷，系统上必须有适当的许可证。例如，您需要有 Veritas Volume Manager 的完全许可证才能使用即时快照功能。磁盘阵列供应商提供的功能也可能要求具有用于特定硬件功能的特殊许可证。[Sun 错误 ID 4948093、i137185]

RAID-5 ISP 卷中的列数

如果 ISP 卷是用 RAID-5 功能创建的，则 `ncols` 和 `nmaxcols` 参数只表示数据列的数目，不包括奇偶检验列。因此，在这样的卷中创建的列数始终比指定数大 1。[Sun 错误 ID 4976891]

其他问题

具有写回缓存的磁盘

配置为使用写回缓存的磁盘驱动器或配置了易失性写回缓存的磁盘阵列会发生数据完整性问题。这种问题发生在电源出现故障、SCSI 总线重置、或者磁盘有缓存数据但尚未将这些数据写到非易失性存储器等其他事件之后。请与磁盘驱动器或磁盘阵列制造商联系，确定系统磁盘驱动器是否使用写回缓存，以及是否可以配置改为禁用写回缓存。

自动导入磁盘组

如果在导入磁盘组时磁盘发生故障，在逐出磁盘组后该磁盘又恢复正常，则在下次系统启动时将自动导入该磁盘组。这有悖于常规，因为通常仅自动导入在崩溃时（非临时性地）导入的磁盘组。

如果需要在系统重新启动时禁止自动导入某个磁盘组，则在准备逐出该磁盘组时，应临时导入该磁盘组（例如，在 HA 配置中）。可使用 `-t` 标志执行 `vxdbg import`。[13741]

重新启动系统后卷没有启动

对包含许多卷的系统执行快速引导时，在运行 `vxrecover -s` 启动卷之前，`vxconfigd` 可能无法自动导入所有磁盘组。其结果是，在重新启动系统后启动应用程序时，某些卷可能不启动。

解决方法：在启动应用程序之前检查卷的状态，或在最后一次调用 `vxrecover` 之前设置休眠时间 (`sleep sec`)。[14450]

强制启动卷

仅当卷至少有一个 `plex` 处于 `ACTIVE` 或 `CLEAN` 状态并且没有标记为 `STALE`、`IOFAIL`、`REMOVED` 或 `NODAREC` 时，`vxrecover` 命令才启动该卷。如果未找到这样的 `plex`，`VxVM` 会认为该卷不再包含有效的最新数据，因此该卷不会自动启动。磁盘故障或 I/O 故障会导致 `plex` 被标记为 `STALE` 或 `IOFAIL`。在上述情况下，要强制启动卷，可使用以下命令：

```
# vxvol -f start volume
```

但是，应在运行此命令之前设法找出问题发生的原因。可能需要从备份中恢复卷内容，也可能需要更换磁盘。[14915]

内存分配失败

在内存很小（32 兆字节或更少）的计算机上，如果内存用量高的卷（如 `RAID-5` 卷）承受较大的 I/O 压力，则会出现系统无法再分配物理内存页的情况。

对 Sun Online:Backup 使用长设备路径

`Sun Online:Backup™` 工具不接受指定给卷的长设备路径名。这是 `Online:Backup` 的一个局限性，即不接受长度超过 24 个字符的设备路径。

解决方法：在较短的路径名中使用符号链接指向到较长的 `/dev/vx/dsk/volname` 路径。

有关 Veritas Volume Replicator 许可证的消息

运行 `vxinstall` 时，在系统重新启动或 `VxVM` 初始化过程中，控制台上可能出现以下消息：

```
系统上未安装 VVR 许可证； vradmind 未启动
```

```
系统上未安装 VVR 许可证； in.vxrsyncd 未启动
```

这些消息仅是提示性的，如果您不是 `Veritas Volume Replicator` 用户，则可以放心地忽略这些消息。

Solaris 问题

Dynamic Tracing Function Boundary Tracing 探测器

`vxio` 驱动程序不支持 `Dynamic Tracing (DTrace) Function Boundary Tracing (FBT)` 探测器。这是因为 `Solaris 10` 中的局限性，使此类探测器无法处理文本大小大于 2MB 的模块。在将 `DTrace FBT` 探测器与 `vxio` 驱动程序一起使用时，控制台中会生成以下错误信息：

fbt: 警告: 无法为模块 vxio 分配 FBT 表
这些消息是无害的, 可以安全地忽略。

根文件系统中所需的 Inode 数

UFS 文件系统中 inode 的默认最大数量取决于该文件系统的大小。在创建 UFS 文件系统后, 如果不重新创建该文件系统, 则无法更改 inode 数。在包含大量 LUN 的系统上, 根文件系统会用尽 inode。这样会导致操作系统和 Veritas Volume Manager 中均出现错误消息。作为一般原则, DMP 为每个 LUN 创建的 inode 的数量是该设备的单独路径数的 16 倍。例如, 通过两个路径连接的 8,000 个 LUN 需要 256,000 个额外的 inode。[538039]

内核驱动程序的兼容性

用于 VxVM 的内核驱动程序的版本与某些版本的 Solaris 操作系统不兼容。安装软件和升级软件安装并正确维护多个内核模块。因此有可能发生不匹配问题 (例如, 当管理员移动了内核驱动程序文件时)。如果出现不匹配, VxVM 内核将在控制台上显示类似下面这样的警告消息:

```
警告 :vxio: 不兼容的内核版本 (5.X), 需要 5.X
```

如果显示此消息, 必须引导系统以便进行修复 (见 《Veritas Volume Manager 故障排除指南》中的说明), 并安装正确的内核模块。要安装正确的内核模块版本, 可使用 cd 命令转到已装入的 root 文件系统的 kernel/drv 目录下。要列出 VxVM 内核模块, 请使用下面的命令:

```
# ls -l vxio* vxspec* vxdmp*
```

特定于版本的内核模块版本以 module.OS_release 形式存储, 其中 OS 和 release 是在系统上分别运行 uname -s 和 uname -r 命令产生的结果。

例如, 在运行 Solaris 2.6 的配置错误的系统上, vxio* 列出的内容可能类似于:

```
-rw-r--r-- 1 root other 1682424 ... vxio
-rw-r--r-- 1 root sys 1647664 ... vxio.SunOS_5.7
-rw-r--r-- 1 root sys 1661340 ... vxio.SunOS_5.8
-rw-r--r-- 1 root sys 1682424 ... vxio.SunOS_5.9
```

正在使用的 vxio 内核模块的大小与 vxio.SunOS_5.8 的版本相匹配。要解决这个问题, 可将 SunOS_5.6 版本复制到所使用的模块名称中:

```
# cp vxio.SunOS_5.6 vxio
```

最后, 重新启动系统。[13312]

交换分区的封装

在封装过程中, 除非分区的分区标记 (如 prtvtoc 所示) 是 swap 或 3, 否则 VxVM 不会将它视为交换分区。用作交换分区但没有此类标签的任何分区都被当作文件系统进行封装。在 vfstab 文件中, 会注明该分区已被封装, 但不转换 vfstab 条目, 因此, 该分区不会作为引导过程的一部分被添加为交换区域。所有要用作交换设备的分区都必须用 swap 标签进行标记才能正确封装。[13388]

保护磁盘上的 0 号块

由于磁盘标签存储在磁盘的 0 号磁盘块上，因此 0 号磁盘块不能使用（也就是说，任何应用程序都不应将信息写入 0 号磁盘块）。VxVM 中内置有特殊的保护机制，用于保护 0 号磁盘块不被覆盖。

定义 2 号磁盘片

在 Solaris 上，非 EFI 磁盘的 2 号片默认情况下是完整磁盘。查找连接的磁盘时，VxVM 会检查磁盘的 2 号片。磁盘的 2 号片必须始终用 0x05 标记定义为完整的盘片。

长交换卷名称所引发的消息

如果在磁盘上封装了多个交换分区，则 VxVM 会将这些交换分区命名为 swapvol、swapvol1、swapvol2 等。重新启动系统时，会出现以下错误信息：
`/dev/vx/dsk/swapvol2: 不允许使用重叠的交换文件`
但是，可以正确添加交换设备，而不会对系统产生任何不良影响。为了避免看到该消息，可将交换卷的名称（除 swapvol 外）从 swapvol*n* 缩短为 swap*n*。

Veritas Enterprise Administrator 中的问题

注意：有关如何设置和启动 VEA 服务器和客户机的信息，请参考《Veritas Storage Foundation 安装指南》。

控制器状态

实际正常的控制器状态可能报告为“不正常”，而实际不正常的控制器状态可能报告为“正常”。[599060]

远程镜像（校园集群）

没有用于创建基于场所的快照的选项。[541104]

“操作”下拉菜单项

不存在“布局视图”、“磁盘视图”或“卷视图”的“操作”下拉菜单项。[596284]

“统计视图”中的 Java 异常错误

“统计视图”中出现 Java 异常错误。[618146]

超出范围异常错误

连接到中央主机时，发生“OutOfBoundException”错误。[616661]

卷标记不显示

在 Microsoft Windows 系统中，添加新的卷标记时不显示现有的卷标记。
[602953]

缓存卷显示为可用于卷集

卷集创建向导在“可用卷”列表中显示缓存卷。缓存卷不应列为可用。在卷集中包括缓存卷会导致数据损坏和系统混乱。[614761]

如果有许多 LUN，则 Storage Agent 转储内核

具有超过 10240 个 LUN 的配置会导致 Storage Agent 将内核转储到目录 /var/vx/isis 中。[584092]

解决方法

- 1 重命名设备发现层 (DDL) 库文件:

```
# mv /opt/VRTSddlpr/lib/ddl.so /opt/VRTSddlpr/lib/ddl.so.orig
```

这将阻止加载 DDL 提供程序，但具有使磁盘阵列、路径和控制器对象在 VEA 客户机 GUI 中不再可用的后果。

- 2 重新启动 Storage Agent:

```
# /opt/VRTSobc/pal33/bin/vxpal -a StorageAgent
```

警报日志和任务日志文件的最大大小

每个警报日志和任务日志文件的默认最大大小为 1953K。可配置的最大大小为 99999999K。在增加最大文件大小之前，请确保有足够的可用空间。非常大的文件大小不存在性能问题。[578688]

创建具有重复磁盘 ID 的磁盘组时失败

VEA 无法创建包含重复磁盘 ID 的磁盘组，并且未提供其他选择。
[Sun 错误 ID 4923820]

在 Windows 2000 Service Pack 2 中打印 VEA 内的错误

用户尝试打印 VEA 中的卷布局视图时，打印结果不清晰。

解决方法：将打印机设备驱动程序升级至 0.3.1282.1 并安装 Service Pack 3。升级至最新版本的 VEA 并重新打印。[286476]

Veritas Volume Manager Web GUI 问题

管理 Solaris X64 平台主机

无法使用 Web GUI 来管理在 Veritas Storage Foundation 4.1 下运行的 Solaris X64 主机。[615554]

在被禁用的卷上创建文件系统

在被禁用的卷上创建文件系统会同时返回成功和失败消息。实际上操作失败。
[565072]

卷的最大空间

卷的最大空间显示为向下舍入的整数 GB 值。如果最大空间小于 1GB，则最大空间显示为 0GB。[573897]

在没有现有磁盘组的情况下创建卷

在没有现有磁盘组的情况下尝试创建卷会产生以下误导性错误：
信息 V-46-1-300 没有可用卷来创建文件系统
[574410]

禁用到 SENA 存储阵列的路径

禁用到 SENA 存储阵列的路径产生以下对话：

pathname 是到其根磁盘的最后一个路径。是否确实要禁用它？
按“下一步”以继续此操作，或者按“取消”以退出此操作。

该消息是错误的，可以安全地继续操作。[575262]

导入磁盘组失败

Web GUI 不显示有关导入磁盘组失败的消息。[596648]

创建 ISP 卷失败

Web GUI 不显示有关创建 ISP 卷失败的消息。[601157]

所有活动警报视图

“所有活动警报视图”不显示正确信息。[601167]

删除活动缓存卷

删除活动缓存卷的尝试失败，错误信息指示未完成。[615395]

损坏的导入磁盘组对话框

如果某些对象不存在，导入磁盘组对话框可能显示为空白，或者显示文本 `<!--td align="center" height="287" valign="midd"`。例如，当尝试从正在重新启动的主机中导入磁盘组时，会发生该错误。[607096]

初始化磁盘

要继续初始化磁盘，在 GUI 中必须至少选择一个对象。[607026]

Veritas Storage Foundation Basic 软限制消息

Web GUI 不显示有关超过 Storage Foundation Basic 软限制的消息。[619039]

创建磁盘组向导

创建磁盘组向导显示内部磁盘可用于创建共享磁盘组。[574717]

创建卷集时出现找不到对象错误

创建卷集时，可能会出现“找不到对象错误”。[615960]

删除卷时出现 Java 异常

删除刚被删除的卷会生成 Java 异常。如果在第一次删除操作之后，不等待网页刷新，便会出现该错误。[608573]

强制从卷集中删除卷时出现消息

强制从卷集中删除卷时显示一则消息，建议选择 **force** 选项。[605468]

从卷集中删除卷时发生 Java 异常

从卷集中删除卷时，在成功的情况下返回不正确的 Java 异常。[564455]

从磁盘组中删除磁盘时出现错误消息

从磁盘组中删除磁盘时出现不正确的错误信息“未选择有效磁盘”。[611894]

断开磁盘操作生成影子条目

无法通过使用 GUI 删除“所有磁盘视图”中断开磁盘的影子条目。必须改为使用诸如 `vxdg -g diskgroup rmdisk diskname` 的命令。[576794]

本地化问题

升级语言包

安装 SF 5.0 语言包、VRTSmulic 与 VRTSmuvmp 之前，必须卸载旧版语言包。[625958]

视图映射屏幕

VEA 中的“视图映射”按钮以及用于输入文件或目录名的字段在日文区域设置下显示不全。这些对象在窗口放大之后才能正确显示。[631174]

Symantec Product Authentication Services 帮助

在法文、日文或简体中文区域设置中，Symantec Product Authentication Services 帮助以英文显示。输入如下命令后即可显示相应语言版本的帮助：

```
# cd /opt/VRTSat/bin/sparcv9
# mv VxSS_Help.vxa VxSS_Help_en.vxa
# mv VxSS_Help_lang.vxa VxSS_Help.vxa
```

其中，lang 代表相应的 fr（法文）、ja（日文）或 zh（简体中文）区域设置。[631206]

升级磁盘组版本

所有磁盘组都有关联的版本号。每个 VxVM 版本都支持特定的一套磁盘组版本，并可以对这些版本的磁盘组进行导入和执行任务。某些新功能和任务仅适用于当前版本的磁盘组，因此需要先升级现有磁盘组，然后才能执行这些任务。下表总结了与 VxVM 2.0 版本及以后每个版本相对应的磁盘组版本：

VxVM 版本	集群协议版本	磁盘组版本	支持的磁盘组版本
2.0	无	20	20
2.2	无	30	30
2.3	无	40	40
2.5	无	50	50
3.0	无	60	20-40、60
3.1	无	70	20-70
3.1.1	10、20	80	20-80
3.2	30	90	20-90
3.5	40	90	20-90
4.0	50	110	20-110
4.1	60	120	20-120
5.0	70	140	20-140

如果想使用此版本中的新功能，则必须升级 *Veritas Cluster Volume Manager (CVM)* 协议版本 (70)，并升级到最新的磁盘组版本 (140)。

使用下面的命令检查磁盘组的版本：

```
# vxdg list diskgroup
```

也可以通过在 vxprint(1M) 命令中使用 -l 选项来确定版本。

要将磁盘组升级到 140 版，请使用以下命令：

```
#vxdg upgrade diskgroup
```

对于共享磁盘组，只有最新的集群协议版本才支持最新的磁盘组版本。要查看当前的集群协议版本，请键入：

```
# vxdctl support
```

要升级整个集群的协议版本，请在主节点上输入以下命令：

```
# vxdctl upgrade
```

请参见《*Veritas Volume Manager 管理员指南*》中的“管理集群功能”一章。

不显示可用控制器

“按控制器扫描磁盘”视图不列出可用控制器。[566619]

有关超过 SF 基本限制的警告消息不传播到 Web GUI

超过 SF 基本限制时，有关该情况的警告消息发送到任务日志，而不发送到 GUI。仅当成功创建了卷时，才会发生该情况。[619039]

Veritas File System 中的已知问题

报告了有关此 Veritas File System 版本的以下问题。

用于处理磁盘配额的 API

VxFS 现在实现了配额应用程序编程接口 (API)，Solaris `quotactl(7I)` 手册页中有相关说明。已经基于 `Q_QUOTACTL ioctl` 编写了自己的配额工具的用户现在可以在 VxFS 文件系统上使用这些工具。但是，如果客户机在 NFS 上装入了 VxFS，则不能使用 `Q_QUOTACTL ioctl` 来管理 VxFS 文件系统配额。只有在 Solaris 操作系统上实现了对 RPC 配额后台驻留程序的修改（启用文件系统上的配额，而不是启用 UFS）后，才能使用这项功能。

堆栈大小更改

在 Solaris 8、Solaris 9 和 Solaris 10 上进行安装时，VxFS 会将默认的堆栈大小更改为 24K（对于 64 位系统）。在 32 位模式下，VxFS 可以使用 16K 大小的堆栈。堆栈大小是在 Solaris 配置文件 `/etc/system` 中指定的。

存储检查点不能与分层存储管理产品一起使用

无法在 Veritas Storage Migrator™ 处于活动状态的文件系统中创建存储检查点，也无法通过采用 DMAPI 接口的其他分层存储管理 (HSM) 产品来创建存储检查点。

VxFS 与某些分层存储管理应用程序不兼容

VxFS 不能与 Veritas Storage Migrator 4.5 版及更早版本一起使用。可以通过 Veritas 客户支持网站上的 Veritas 支持获得 Veritas Storage Migrator 4.5 的修补程序，网址为：

<http://support.veritas.com/docs/258566.htm>

其他 HSM 应用程序可能也需要修补程序。有关产品特定的信息，请与您的 HSM 供应商联系。

对于大于 1 TB 的 VxFS 文件系统，`ustat` 命令返回错误。

由于用于存储文件系统大小的变量溢出，因此 `ustat` 命令对容量大于 1 TB 的 VxFS 文件系统返回 `E_OVERFLOW` 错误。请参见 `ustat(2)` 手册页。

命令必须识别大文件才能在容量大于 1 TB 的文件系统上正确操作

对于将在具有大型文件的系统上正确操作的实用程序，必须能够识别大文件。即使对具有大型文件的系统中的小文件调用命令，此规则依然适用。请参见《Veritas File System 管理员指南》中有关磁盘布局的信息。

不支持大文件的文件系统上的 Inode 限制

对于具有超过八百万个 inode 的文件系统而言，必须使用 mkfs 的 largefiles 选项来创建它（也可以使用 fsadm 实用程序在该文件系统上设置 largefiles 标志）。有关详细信息，请参见 mkfs_vxfs(1M) 和 fsadm_vxfs(1M) 手册页。默认情况下，在 VxFS 4.1 上启用 largefiles 选项。在以前的 VxFS 版本中，nolargefiles 是默认的装入选项。

文件更改日志文件上不支持 ioctl

文件更改日志文件上不支持 ioctl。因此，不支持对 FCL 文件运行诸如 fsapadm、setext、fiostat 和 fsmap 的命令，因为这些命令使用内部 ioctl 来实现它们的功能。

仅应将大型文件系统装入具有足够内存的系统中

装入文件系统时，VxFS 将保持内核中的某些数据结构。随着文件系统大小的增加，VxFS 所存储的数据结构量也随之增加。通常情况下，文件系统中每个分配单元的容量大约为 128 字节（32,768 个文件系统块）。对于 8K 块大小的文件系统而言，此规则将变成每 1 TB 使用 512K 的容量（对于 1K 块大小的文件系统而言，每 1 TB 使用 4 MB 的容量）。因此，大型文件系统只能装入具有足够内存的系统中。下面各表显示了装入大型文件系统的内存要求。

表 1-1 容量为 1K 块大小的文件系统的内存使用

文件系统大小	128 GB	1 TB	8 TB	64 TB	256 TB
内存使用	1 MB	4 MB	32 MB	无	无

表 1-2 容量为 2K 块大小的文件系统的内存使用

文件系统大小	128 GB	1 TB	8 TB	64 TB	256 TB
内存使用	512K	2 MB	16 MB	128 MB	无

表 1-3 容量为 4K 块大小的文件系统的内存使用

文件系统大小	128 GB	1 TB	8 TB	64 TB	256 TB
内存使用	256K	1 MB	8 MB	64 MB	无

表 1-4 容量为 8K 块大小的文件系统的内存使用

文件系统大小	128 GB	1 TB	8 TB	64 TB	256 TB
内存使用	128K	512K	4 MB	32 MB	128 MB

执行完整的 `fsck` 时，系统将保持核心中的某些数据结构，用于验证空间使用和 `inode` 使用。所需的内存取决于 `inode` 的数量和文件系统中块的数量。对于 8K 块大小的文件系统，执行 `fsck` 命令时，每 1 TB 大约需要 16 MB（对于 1K 块大小的文件系统，每 1 TB 需要 128 MB），并且每一百万个 `inode` 需要 32 MB。在启用大文件的系统上运行完整的 `fsck` 之前，应该在该系统上配置足够的内存和交换空间。如果系统通过 32 位内核进行引导，则对具有大量块或大量 `inode` 的文件系统运行完整的 `fsck` 可能会失败，原因是可用于 32 位进程的地址空间总量是有限的。重复 `fsck` 不需要大量内存，也没有这些问题。

快速 I/O 文件不能是稀疏文件

当您尝试将稀疏文件转换为快速 I/O 文件时，如果 Oracle 尝试写入未分配的块，Oracle 实例可能会失败。特别要说明的是，Oracle8i 和 Oracle9i 临时表空间所使用的数据文件可能是稀疏文件，因此不要将这些文件转换为快速 I/O 文件。有关更多信息，请参见《*Veritas Storage Foundation 4.1 for Oracle Database 管理员指南*》。

某些磁盘配额操作在 NFS 上不起作用

如果通过 NFS 导出 VxFS 文件系统，则当用户从 NFS 客户机访问文件系统时，将应用文件系统上的配额。但是，不能在 NFS 客户机上使用 Solaris 和 VxFS 配额命令来查询或编辑配额。可以在服务器上使用 VxFS 配额命令来查询或编辑配额。

以 ja_JP.UTF-8 编码的文件名发生 `fscdstask validate` 错误

当指定装入点上的文件名的编码为 `jp_JP.UTF-8` 时，`fscdstask validate` 命令将返回错误，但是区域设置已更改为 `ja_JP.eucJP` 或 `ja_JP.PCK`。错误如下所示：

```
xargs: 输入文件已损坏。: 字节顺序不正确
```

文件应该使用所在的文件系统的区域设置编码进行创建。

使用访问控制列表时的非标准命令行为

如果对文件或目录使用 ACL，则 VxFS 文件系统上的 `ls -l` 命令输出就会显示 `mask/CLASS_OBJ`，而不是组权限。可以通过使用 `getfacl` 命令确定有效的组权限。

如果在文件或目录中使用 ACL，`chmod` 命令会更改 `mask/CLASS_OBJ`，而不会更改组权限。GROUP_OBJ 不是通过 `chmod` 进行更改的，并且由于有效的组权限是由 GROUP_OBJ 和 CLASS_OBJ 确定的，因此默认的组无法获得 `chmod` 指定的权

限。由于 `ls -l` 仅显示掩码（通过 `chmod` 进行更改），因此它仅显示按照 `chmod` 指定的要求更改的组权限。对于包含 ACL 的文件，请使用 `setfacl` 命令处理权限。在 Solaris 9 中，`ls` 命令显示这些权限的方式与在 UFS 和 VxFS 中相同。

要了解与 ACL 有关的信息，请参见以下手册页：`aclcheck(3)`、`aclsort(3)`、`chmod(1)`、`getfacl(1)`、`ls(1)`、`setfacl(1)` 和 `umask(1)`。

无法调整 100% 完整文件系统的大小

在某些情况下，由于更新结构信息的空间不足，`fsadm` 和 `fsvoladm` 命令无法调整 100% 完整文件系统的大小。定期检查 VxFS 文件系统，并在它们接近 100% 的容量时增大其容量。如果文件系统处于非常繁忙的状态，也会出现此问题。释放空间或减少文件系统上的活动，并重新尝试调整大小。

JumpStart Enterprise 工具包不受支持

JumpStart Enterprise 工具包在此版本中不受支持，但是在下一版本中受支持。

安装后首次引导时可能会显示 DTrace 警告

在 Solaris 10 操作系统中，当安装 VxFS 后首次引导系统时可能会显示 DTrace 警告。这些警告类似于以下内容：

```
正在配置设备。  
主机名 : MyHost.MyCompany.com  
警告 : 无法为模块 vxfs 分配 SDT 表  
.  
.  
警告 : 无法为模块 vxfs 分配 SDT 表  
警告 : 无法为模块 vxfs 分配 FBT 表  
正在加载 smf(5) 服务描述 : 2/2
```

这些警告表明 SDT 和 FBT DTrace 探测器可能不适用于 `vxfs` 模块，直到下次重新启动后才可用。`vxfs` 模块仍将加载并正确工作。

以后重新启动时，不会显示这些警告。

Veritas File System Web GUI 联机帮助中的已知问题

此版本的以下已知问题已被报告：

- 对于装入存储检查点操作，必须从下拉列表中选择现有的存储检查点。不能手动输入存储检查点名称。
- 在卷集上创建新文件系统任务只能在 VxFS 文件系统中执行。
- 对于重新装入存储检查点操作，集群文件系统的向导第 2 页中的更多信息链接不能正常使用。
- 对于卸载存储检查点操作，集群文件系统的向导第 2 页中的更多信息链接不能正常使用。

当应用于来自 Veritas File System 4.0 或 4.1 的不干净的文件系统时，fsck 可能会终止。

由于 VxFS fsck 实用程序在 5.0 和 4.0 及 4.1 版本之间的不兼容性，如果是从更旧的文件系统运行，fsck 在意向日志重放期间可能会终止。这仅会影响这样的文件系统：以前在 VxFS 4.0 或 4.1 下运行，是基于 CVM 共享的卷或多卷文件系统，并且在 VxFS 5.0 中使用之前未卸载干净。

如果遇到这种情况，请执行完全 fsck，使文件系统处于可以装入的一致、干净的状态。

请参见 fsck_vxfs(1M) 手册页。

fcl_keeptime 在修改为非默认值之后无法设置为默认值

通过 vxtunefs 命令将 fcl_keeptime 的值修改为非默认值之后，无法将该值重置为默认值 0。

多卷文件系统上的完整卷 0 的问题

仅仅在文件系统上的某些文件系统元数据必须从卷 0 分配。如果卷 0 已满，则诸如升级文件系统磁盘布局版本以及创建存储检查点的操作可能会失败。释放卷 0 中的空间之后，可以重试这些操作。

用于数据库的 Veritas Storage Foundation 中的已知问题

Veritas Storage Foundation for Oracle 中的已知问题

以下是此 Veritas Storage Foundation for Oracle 版本中的已知问题：

ORAMAP-FMON 有时不启动

ORAMAP-FMON 在 Oracle 10gR2 中可能不启动。要解决此问题，请在 init.ora 中添加以下条目，然后尝试启动 ORAMAP：
_filemap_dir=\$ORACLE_HOME/rdbms/filemap

容器路径名称中的空格

此版本不支持在容器路径名称中使用空格。[31604]

反转重同步使优化参数丢失

运行 Database FlashSnap 反转重同步命令之后，主数据库上的特殊优化参数（例如 CQIO 和 vxtunefs）将丢失。这些参数将需要手动重置。[41898]

VEA Web GUI 所需的 Internet Explorer 安全设置

要使 VEA Web GUI 正确运行，Internet Explorer 浏览器中的安全设置必须设为中或低。[223589]

删除快照计划

如果快照计划处于一种无法被 `dbed_vmchecksnap -o remove` 删除的状态，您可以通过首先强制快照然后重同步，来删除快照计划。然后，使用 `dbed_vmchecksnap -o remove` 从存储库中删除快照计划条目。[276354]

具有相同名称的快照计划

如果两个快照计划创建时使用了相同的名称但不同的路径，将显示错误信息快照计划已存在。[287057]

dbed_analyzer 输出中的列标题未本地化

`dbed_analyzer` 命令输出中的列标题 `TBSNAME` 未本地化。如果您是在非英语环境中运行，请注意 `TBSNAME` 的意思是“表空间名称”。[301174]

GUI 中的检查点对象的大小

GUI 中的检查点对象不显示检查点的正确大小（按块计）。即使在 GUI 中重新扫描了检查点之后，该大小也不更新。[412038]

dbed_analyzer 中的表头不对齐

由 `dbed_analyzer` 生成的以下表头与它们下面显示的数据不对齐：`DATAFILE`、`DEVICE`、`SIZE`（扇区）和 `TBSNAME`。这可能会导致数据在错误的表头下对齐。另外，如果存在日语表空间，并且表空间名称超过了 9 个字符，则 `DEVICE` 列的数据行将偏移 5 个字符。[421816]

使用日语表空间名称时的 dbed_analyzer

在日语版的 VERITAS Storage Foundation for Oracle 中，如果提供无效的日语表空间名称作为 `dbed_analyzer` 命令（使用选项 `-t`）的输入，生成的错误信息（错误 V-81-5908）将仅包括无效日语表空间名称的第一个字符，而不是包括整个名称。[424436]

在日语版中，通过 GUI 启动数据库时 NLS 设置不正确

在日语版的 VERITAS Storage Foundation for Oracle 中，如果 NLS 设置不正确，当尝试通过 GUI 启动数据库时，将打开一个错误窗口，显示消息“找不到错误信息”，并且 GUI 不会显示数据库信息。[430072]

日语版中存储回滚数据库信息不对齐

在日语版的 VERITAS Storage Foundation for Oracle 中，“存储回滚管理”菜单中的数据库信息不对齐。[497035]

从 GUI 启动检查点策略

无法从 GUI 启动检查点策略。[506088]

删除 SFDB 存储库数据库时不删除 .odbc.ini

使用 `sfua_db_config -o dropdb` 命令删除 SFDB 存储库数据库时，不会同时删除 `/etc/vx/vxdbed/.odbc.ini` 文件。[534163, 611943]

解决方法：在运行 `sfua_db_config -o dropdb` 之后，可以使用 `rm` 命令手动删除 `.odbc.ini`：

```
rm /etc/vx/vxdbed/.odbc.ini
```

无法通过 ODM 在原始设备上创建 Oracle 10gR1 数据库

无法通过 ODM 在原始设备上创建 Oracle 10gR1 数据库，生成的错误信息类似如下：

```
ORA-00200: 无法创建控制文件
```

在原始设备上禁用 ODM 之后，便可以成功创建数据库。这是由于 Oracle 错误导致的。有关详细的解决方法步骤，请参见 Symantec 技术支持网站上的以下技术说明：

<http://support.veritas.com/docs/540461.htm>

[540461]

Java GUI 中重新出现未装入的检查点克隆数据库

在重新扫描之后，Java GUI 树中重新出现未装入的检查点克隆数据库。[567342]

克隆使用 OMF 控制文件的数据库的即时检查点

如果为使用 Oracle Managed Files (OMF) 控制文件的数据库创建了即时检查点，则使用 `dbed_clonedb` 命令创建克隆将失败，消息如下：

```
SFORA dbed_clonedb 错误 V-81-7052 即时检查点克隆不支持 OMF 数据或重置日志。
```

解决方法：使用脱机或联机检查点，或者将 OMF 控制文件转换为具有非 OMF 名称的控制文件。[570250]

推荐的日志文件大小

警报日志和任务日志中的最大文件大小的默认值各为 1953 Kb。虽然可以将它们增加到 8 位数的最大值 (99999999)，但该最大值并无实际意义，并且可能导致发生问题。确保有可用于您设置的最大日志文件大小的足够空间，并且所用的设置不会对性能造成负面影响。[578688]

由于区域设置不同，SFDB 命令可能会失败

如果执行 SFDB 命令时使用的区域设置与启动 SFDB 服务器时所用的区域设置不同，则命令可能会失败，消息如下：

```
([Sybase] [ODBC 驱动程序] [Adaptive Server Anywhere] 语法错误)。
```

解决方法： 执行以下命令以更正该问题。

```
/opt/VRTSdbcom/bin/sfua_db_config -o stopserver  
/opt/VRTSdbcom/bin/sfua_db_config -o startserver  
/opt/VRTSdbcom/bin/sfua_db_config -o startdb
```

[582069]

使用 GUI 向导中的“帮助”按钮时生成错误信息

单击 GUI 向导中的帮助按钮时生成以下错误信息：

错误 V-39-53246-8 无法获取进入点。请检查与清单有关的信息

解决方法： 按确定并忽略该错误。[582416]

sfua_db_config 不检查存储库磁盘是本地磁盘还是共享磁盘

在 HA 配置中，sfua_db_config 命令不检查要用于存储库的磁盘是本地磁盘还是共享磁盘。[583158]

GUI 不显示读/写检查点的正确装入点信息

当用户重新装入读/写检查点时，GUI 不能正确地显示装入点信息。[584044]

创建联机检查点时的归档日志目标

为仅仅将 DB_RECOVERY_FILE_DEST 设置为归档日志目标的数据库创建联机检查点时，会导致检查点创建命令的输出中出现警告消息。此消息指示无法从该检查点创建克隆。如果随后使用该检查点运行 dbed_clonedb，数据库恢复将失败，并出现 Oracle 错误。

解决方法： 要从联机检查点成功创建数据库的克隆，请定义一个非 DB_RECOVERY_FILE_DEST 强制归档日志目标。[589288]

以前的 VRTSdbms3 安装会导致重新安装失败

删除 VRTSdbms3 时可能留下了 /opt/VRTSdbms2/bin32/servername 或 /opt/VRTSdbms3，它们会导致 VRTSdbms3 的新安装失败。

解决方法： 开始 VRTSdbms3 实例的新安装之前，手动删除 /opt/VRTSdbms3（如果它是从以前的 VRTSdbms3 软件包安装中遗留的）。[597257]

Database FlashSnap 克隆不支持存储检查点

使用 Database FlashSnap 克隆的数据库当前不支持存储检查点操作。[600431]

在 Solaris 10 CDE 桌面上使用日语 UTF-8 输入时，VEA 客户机崩溃。

在 Solaris 10 CDE 桌面上使用 ja_JP.UTF-8 区域设置运行 VEA 客户机时，多次更改为日语输入会导致 VEA 客户机崩溃，并出现以下 Java 错误。

HotSpot 虚拟计算机检测到意外错误：

```
SIGSEGV (0xb), 位于 pc=0xf882d840, pid=xxxxxx, tid=xx
```

有问题的框架：
C [xiiimp.so.2+0x1d840]

这是与 JRE1.5 有关的 Solaris 问题。

解决方法： 要避免在 ja_JP.UTF-8 区域设置下使用 CDE 桌面时出现此问题，请从 CDE 工作区菜单中为日语输入法选择 ATOK16 或 Wnn6，然后重新登录到 CDE 会话。[601693]

DBDST 类名限制为 29 个字符

尝试删除所含字符数不低于 30 的类名时，dbdst_admin -o rmclass 命令失败。最大类名长度为 29 个字符。[601746]

从 GUI 启动 Oracle 数据库之前，必须运行 dbed_update

从 GUI 启动 Oracle 数据库时，如果还没有从命令行运行 dbed_update，表空间文件夹将为空。从 GUI 重新扫描无法解决该问题。

解决方法： 从 GUI 启动 Oracle 数据库之前，从命令行运行 dbed_update。[604849]

数据文件统计向导缺少警告消息

在数据文件统计向导中，如果没有数据文件的统计信息，将显示一个空表，而不是显示确认没有可用统计信息的警告消息。

同时，在数据文件统计向导中，如果用户未选择统计信息，向导应显示警告消息，而不是转至下一页。否则，下一页将引发异常。[604858]

在 RAC 中，必须在 VCS 主节点上运行 dbed_vmchecksnap。

对于 SF Oracle RAC 数据库，dbed_vmchecksnap 命令必须在 Veritas Cluster Server 主节点上运行。另外，仅支持联机快照，这意味着在执行验证的主节点上，数据库实例应该已启动且正在运行。[605330]

存储库服务器不能正确处理 ja_JP.PCK 区域设置

存储库数据库服务器不能正确处理 ja_JP.PCK 区域设置。

解决方法： 如果操作系统的区域设置为 ja_JP.PCK，则必须执行以下命令：

使用 ja_JP.PCK 区域设置启动存储库数据库时，执行这些命令：

```
/opt/VRTSdbcom/bin/sfua_db_config -o stopserver  
export ASLANG=JA  
export ASCHARSET=sjis  
/opt/VRTSdbcom/bin/sfua_db_config -o startserver
```

在 ja_JP.PCK 区域设置下执行 SFDB 命令时，将 CharSet=sjis 追加到 /etc/vx/vxdbed/.odbc.ini 文件。[605583, 608774]

注意: 如果要使用 ja_JP.PCK 以外的区域设置来执行 SFDB 命令, 则必须从 /etc/vx/vxdbed/.odbc.ini 文件中删除 CharSet 参数。

VEA GUI “视图” 菜单使用重复的 “V” 热键

在 VEA GUI 主窗口中, 工具栏中的视图和视图映射命令使用相同的热键 “v”。
[605776]

存储检查点命令的效果在 SFDB GUI 中出现延迟

通过执行 SFDB 存储检查点 CLI 生成的存储库更改不立即反映在 SFDB GUI 中。受影响的 CLI 有 dbed_update、vxckpt_create、vxckpt_mount、vxckpt_umount 和 vxckpt_remove。

解决方法: 从 SFDB GUI 手动刷新或者等 30 分钟, 因为 SFDB 提供程序每 30 分钟自动重新扫描一次。[606994]

来自 Web GUI 的错误 V-40-49408-54

Web GUI 请求有时生成错误信息

错误 V-40-49408-54。

解决方法: 在 /etc/vx/isis/Registry 文件中, 在 InterfaceFormFILE 和 SecurityFormFILE 条目的 etc 和尾部文件名之间插入一个正斜杠 “/”。

```
"InterfaceFormFILE" = "/opt/VRTSdbcom/etc/interfaceform.xml";  
"SecurityFormFILE" = "/opt/VRTSdbcom/etc/securityform.xml";
```

然后重新启动 DBEDAgent。[607084, 610519]

GUI 中的 “下一步” 按钮消失, 无法创建计划任务

尝试从 GUI 计划启动克隆数据库任务时, 在 “启动快照” 数据库页中输入所有克隆数据库信息之后, 下一步按钮被禁用。用户无法继续完成计划任务的创建。

[607618]

删除 VRTSdbed 之后仍然保留帮助目录

删除 VRTSdbed 5.0 软件包之后, 目录

/opt/VRTSdbed/usr/lib/vxvm/voladm.d/help 仍然保留。

解决方法: 删除 VRTSdbed 5.0 软件包之后, 使用以下命令删除该目录:

```
rmdir /opt/VRTSdbed/usr/lib/vxvm/voladm.d/help
```

[608435]

多个命令使用相同的 GUI 快捷键

弹出菜单中的重新扫描和属性命令使用相同的快捷键 “R”。另外, “创建快捷方式向导” 中的创建检查点和保留此检查点 ... 命令具有相同的快捷键 “t”。[608667]

Web GUI 统计信息计划程序跳过第一次统计信息收集

Web GUI 统计信息计划程序使用客户机时间戳，而不是服务器时间戳。这导致跳过了第一次统计信息收集。例如，假设系统时间为 14:00，客户机时间为 13:45。如果用户要从 13:45 开始创建三个样本，每个样本之间的间隔为 30 分钟，将仅显示两个样本：一个在 14:15，另一个在 14:45。[608697]

无法在 Firefox 浏览器中刷新视图统计向导

在 Mozilla Firefox 浏览器中使用 Web GUI 时，“视图统计”向导中的“刷新”命令不起作用。[608697]

在没有快照计划的情况下使用 dbed_vmsnap

如果使用 dbed_vmsnap 指定不存在的快照计划，可能会出现以下错误：
SFORA dbed_vmsnap 错误 V-81-6518 无法在存储库中找到快照计划“snap_plan”。
/opt/VRTSdbed/bin/dbed_vmsnap[21]: 测试: 应有参数。

解决方法: 将快照计划的名称更改为存在的快照计划的名称，然后重新运行 dbed_vmsnap 命令。[609684]

在更改端口号时更改 admin.properties 的文件权限

如果在 /etc/vx/vxdbed/admin.properties 中更改通信端口号，则必须使用以下命令将该文件的权限更改为 444:

```
chmod 444 /etc/vx/vxdbed/admin.properties
```

[610437]

升级到 5.0 存储库可能会失败

从以前版本的存储库升级为 SFDB 5.0 时，运行 dbed_update 可能会失败，错误信息如下:

```
[Sybase] [ODBC 驱动程序] [Adaptive Server Anywhere] 表  
“SnapshotTablespace” 的索引 “UniqueSnapshotTablespace” 不是唯一的  
(23000)。
```

SFORA dbed_update 错误 V-81-3048 无法升级存储库。

此错误指示在升级到 5.0 SFDB 存储库时，无法保存在 5.0 之前创建的存储检查点的表空间列表。这些存储检查点将显示（使用 dbed_ckptdisplay）为未完成。但是，仍然可以使用存储检查点来正常地装入、回滚和克隆数据库。

解决方法: 运行 dbed_update 之后，删除 5.0 之前的基于文本的存储库。基于文本的存储库位于 /etc/vx/vxdba/\$ORACLE_SID 中。[611154]

sfua_db_config 创建两个 /tmp 目录

sfua_db_config 命令创建一个额外的 /tmp 目录，因为第一个 /tmp 目录名实际包含一个尾部回车符，即 /tmp<CR>。这将生成引起混淆的输出：看起来就像有两个 /tmp 目录。

解决方法: 删除名称包含尾部回车符的 /tmp。[611944]

sfua_db_config -o startdb 不确认存储库数据库已启动

sfua_db_config -o startdb 命令不输出指示 SFDB 存储库数据库是否已成功启动的消息。

解决方法：通过随后运行以下命令来检查启动成功还是失败：

```
sfua_db_config -o dbstatus
```

[613681]

删除 VRTSdbed 之后文件仍然保留

删除 VRTSdbed 软件包时并不删除以下文件：

```
/opt/VRTSdbed/usr/lib/vxvm/voladm.d/help/plan.create.help  
/opt/VRTSdbed/usr/lib/vxvm/voladm.d/help/plan.display.help  
/opt/VRTSdbed/usr/lib/vxvm/voladm.d/help/plan.main.help
```

解决方法：删除 VRTSdbed 软件包之后，使用 rm 命令手动删除这些文件。

[608352]

指向快速 I/O 文件的符号链接导致产生错误

如果数据库包含指向快速 I/O 文件的符号链接，则 Oracle 10g 会产生以下错误：

```
ORA-27094: 无法使用原始卷
```

为避免此错误，请不要使用指向快速 I/O 文件的符号链接。

此问题适用于 Oracle 10.1.0.2 版。此问题已报告给 Oracle 并将在以后的 Oracle 版本中得到解决。[614508]

如果没有正确的 HA 许可证或设置，则不要安装选项 3 (SF Oracle RAC)

使用 Veritas 产品安装程序安装 Storage Foundation for Oracle 时，如果没有正确的 HA 许可证或设置，则不要选择选项 3（Storage Foundation for Oracle RAC 软件包）。

这不会导致安装失败，但会导致向系统日志文件中写入 VCS/GAB 错误信息，从而引起混淆。[614685]

连接到 4.1 主机时，不支持通过 Web GUI 进行的统计任务

连接到 4.1 主机时，不支持通过 Web GUI 运行统计任务。如果尝试运行“创建统计任务”，将收到以下错误信息：

```
错误 V-40-49408-42 — 不存在该对象的具有指定的唯一标识符的界面。
```

[615819]

取消配置 SFDB 存储库之前，had 必须正在运行

要使用 sfua_db_config 在 VCS 环境中取消配置 SFDB 存储库，请确保 had 进程正在 sfua_db_config -o unconfig_cluster 所运行的系统中运行。

如果 had 进程不在该系统中运行，sfua_db_config 将不会删除存储库 VCS 服务组 sfua_Base。[616387]

必须手动安装 VRTScsocw 软件包

每次使用选项 1（必需的 Veritas Storage Foundation for Oracle 软件包）或选项 2（所有 Veritas Storage Foundation for Oracle 软件包）安装 Veritas Storage Foundation for Oracle HA 时，都缺少 VRTScsocw 软件包。要使用配置向导来设置 Oracle 代理，必须从位于以下位置的 dvd1 映像装入点手动安装该软件包：
`cluster_server_agents/oracle_agent/pkgs`

注意：每次卸载该产品时，在某些情况下产品卸载程序无法删除此软件包。在这种情况下，必须手动删除软件包。

[622316]

Veritas Storage Foundation for DB2 中的已知问题

以下是此 Veritas Storage Foundation for DB2 版本中的已知问题：

如果在备份后将表空间从快速 I/O 转换为普通文件，则无法恢复

如果在备份数据库后将表空间从快速 I/O 文件转换为普通文件，则将无法从该备份恢复表空间。例如，如果将一个具有 DMS 表空间的数据库备份作为容器，而该表空间包含快速 I/O 文件，然后又将这些快速 I/O 文件转换成了普通文件，那么从该备份恢复数据库将失败。

解决方法：在恢复数据库之前，使用 `qio_recreate` 命令来重新创建必要的快速 I/O 文件。[25272]

容器路径名称中的空格

此版本不支持在容器路径名称中使用空格。[31604]

VEA Web GUI 所需的 Internet Explorer 安全设置

要使 VEA Web GUI 正确运行，Internet Explorer 浏览器中的安全设置必须设为中或低。[223589]

删除快照计划

如果快照计划处于一种无法被 `dbed_vmchecksnap -o remove` 删除的状态，您可以通过首先强制快照然后重同步，来删除快照计划。然后，使用 `dbed_vmchecksnap -o remove` 从存储库中删除快照计划条目。[276354]

具有相同名称的快照计划

如果两个快照计划创建时使用了相同的名称但不同的路径，将显示错误信息快照计划已存在。[287057]

DPF 不完全支持本地化

DB2 数据库分区功能 (DPF) 不完全支持本地化。其结果是，`db2ed_checkconfig_all`、`db2ed_saveconfig_all` 和 `db2ed_ckptcreate_all` 的命令输出可能在日语区域设置中显示无用字符。[303712]

GUI 中的检查点对象的大小

GUI 中的检查点对象不显示检查点的正确大小（按块计）。即使在 GUI 中重新扫描了检查点之后，该大小也不更新。[412038]

使用 `offhost db2ed_vmclonedb -o umount` 的分段错误

执行带 `-o umount` 选项的 `offhost db2ed_vmclonedb` 命令时，对于 `online_snapshot` 和脱机模式有时会生成“分段错误”消息。可以忽略此消息。克隆操作已成功完成。[417505]

从 GUI 启动检查点策略

无法从 GUI 启动检查点策略。[506088]

删除 SFDB 存储库数据库时不删除 `.odbc.ini`

使用 `sfua_db_config -o dropdb` 命令删除 SFDB 存储库数据库时，不会同时删除 `/etc/vx/vxdbed/.odbc.ini` 文件。[534163, 611943]

解决方法：在运行 `sfua_db_config -o dropdb` 之后，可以使用 `rm` 命令手动删除 `.odbc.ini`：
`rm /etc/vx/vxdbed/.odbc.ini`

Java GUI 中重新出现未装入的检查点克隆数据库

在重新扫描之后，Java GUI 树中重新出现未装入的检查点克隆数据库。[567342]

推荐的日志文件大小

警报日志和任务日志中的最大文件大小的默认值各为 1953 Kb。虽然可以将它们增加到 8 位数的最大值 (99999999)，但该最大值并无实际意义，并且可能导致发生问题。确保有可用于您设置的最大日志文件大小的足够空间，并且所用的设置不会对性能造成负面影响。[578688]

由于区域设置不同，SFDB 命令可能会失败

如果执行 SFDB 命令时使用的区域设置与启动 SFDB 服务器时所用的区域设置不同，则命令可能会失败，消息如下：

([Sybase] [ODBC 驱动程序] [Adaptive Server Anywhere] 语法错误)。

解决方法：执行以下命令以更正该问题。

```
/opt/VRTSdbcom/bin/sfua_db_config -o stopserver  
/opt/VRTSdbcom/bin/sfua_db_config -o startserver  
/opt/VRTSdbcom/bin/sfua_db_config -o startdb
```

[582069]

GUI 不显示读/写检查点的正确装入点信息

当用户重新装入读/写检查点时，GUI 不能正确地显示装入点信息。[584044]

以前的 VRTSdbms3 安装会导致重新安装失败

删除 VRTSdbms3 时可能留下了 /opt/VRTSdbms2/bin32/servername 或 /opt/VRTSdbms3，它们会导致 VRTSdbms3 的新安装失败。

解决方法：开始 VRTSdbms3 实例的新安装之前，手动删除 /opt/VRTSdbms3（如果它是从以前的 VRTSdbms3 软件包安装中遗留的）。[597257]

Database FlashSnap 克隆不支持存储检查点

使用 Database FlashSnap 克隆的数据库当前不支持存储检查点操作。[600431]

db2ed_clonedb 和 db2ed_vmclonedb 不支持自动存储数据库

db2ed_clonedb 和 db2ed_vmclonedb 命令不支持自动存储数据库。对自动存储数据库使用任何一个命令都会生成以下消息：

```
DBT1037N: 无法为自动存储表空间指定 CONT_PATH 条目  
[600490]
```

在 Solaris 10 CDE 桌面上使用日语 UTF-8 输入时，VEA 客户机崩溃

在 Solaris 10 CDE 桌面上使用 ja_JP.UTF-8 区域设置运行 VEA 客户机时，多次更改为日语输入会导致 VEA 客户机崩溃，并出现以下 Java 错误。

```
HotSpot 虚拟计算机检测到意外错误：  
SIGSEGV (0xb)，位于 pc=0xf882d840，pid=xxxxxx，tid=xx
```

有问题的框架：
C [xiiimp.so.2+0x1d840]

这是与 JRE1.5 有关的 Solaris 问题。

解决方法：要避免在 ja_JP.UTF-8 区域设置下使用 CDE 桌面时出现此问题，请从 CDE 工作区菜单中为日语输入法选择 ATOK16 或 Wnn6，然后重新登录到 CDE 会话。[601693]

DBDST 类名限制为 29 个字符

尝试删除所含字符数不低于 30 的类名时，dbdst_admin -o rmclass 命令失败。最大类名长度为 29 个字符。[601746]

如果数据库不在 SFDB 存储库中，则无法从 GUI 启动数据库

如果 DB2 数据库不在 SFDB 存储库中，并且用户尝试从 GUI 启动实例，则数据库将不会在 GUI 中显示。

解决方法：运行 db2ed_update 命令。[604853]

数据文件统计向导缺少警告消息

在数据文件统计向导中，如果没有数据文件的统计信息，将显示一个空表，而不是显示确认没有可用统计信息的警告消息。

同时，在数据文件统计向导中，如果用户未选择统计信息，向导应显示警告消息，而不是转至下一页。否则，下一页将引发异常。[604858]

存储库服务器不能正确处理 ja_JP.PCK 区域设置

存储库数据库服务器不能正确处理 ja_JP.PCK 区域设置。

解决方法：如果操作系统的区域设置为 ja_JP.PCK，则必须执行以下命令：

使用 ja_JP.PCK 区域设置启动存储库数据库时，执行这些命令：

```
/opt/VRTSdbcom/bin/sfua_db_config -o stopserver  
export ASLANG=JA  
export ASCHARSET=sjis  
/opt/VRTSdbcom/bin/sfua_db_config -o startserver
```

在 ja_JP.PCK 区域设置下执行 SFDB 命令时，将 CharSet=sjis 追加到 /etc/vx/vxdbed/.odbc.ini 文件。[605583, 608774]

注意：如果要使用 ja_JP.PCK 以外的区域设置来执行 SFDB 命令，则必须从 /etc/vx/vxdbed/.odbc.ini 文件中删除 CharSet 参数。

VEA GUI “视图” 菜单使用重复的 “V” 热键

在 VEA GUI 主窗口中，工具栏中的视图和视图映射命令使用相同的热键 “v”。[605776]

来自 Web GUI 的错误 V-40-49408-54

Web GUI 请求有时生成错误信息

错误 V-40-49408-54。

解决方法：在 /etc/vx/isis/Registry 文件中，在 InterfaceFormFILE 和 SecurityFormFILE 条目的 etc 和尾部文件名之间插入一个正斜杠 “/”。
"InterfaceFormFILE" = "/opt/VRTSdbcom/etc/interfaceform.xml";
"SecurityFormFILE" = "/opt/VRTSdbcom/etc/securityform.xml";

然后重新启动 DBEDAgent。[607084, 610519]

DBDST 输出消息引用 SFORA 而不是 SFDB2

在某些情况下，DBDST 命令生成的输出消息包含对 Oracle (SFORA) 而不是 DB2 (SFDB2) 的引用。例如：

```
dbdst_addvol
```

SFORA dbdst_addvol 错误 V-81-4265 用法：

[607890]

多个命令使用相同的 GUI 快捷键

弹出菜单中的重新扫描和属性命令使用相同的快捷键“R”。另外，“创建快捷方式向导”中的创建检查点和保留此检查点...命令具有相同的快捷键“t”。[608667]

Web GUI 统计信息计划程序跳过第一次统计信息收集

Web GUI 统计信息计划程序使用客户机时间戳，而不是服务器时间戳。这导致跳过了第一次统计信息收集。例如，假设系统时间为 14:00，客户机时间为 13:45。如果用户要从 13:45 开始创建三个样本，每个样本之间的间隔为 30 分钟，将仅显示两个样本：一个在 14:15，另一个在 14:45。[608697]

无法在 Firefox 浏览器中刷新视图统计向导

在 Mozilla Firefox 浏览器中使用 Web GUI 时，“视图统计”向导中的“刷新”命令不起作用。[608697]

如果某个检查点使用其他检查点的装入前缀，则 db2ed_ckptmount 将无提示下退出

如果检查点使用的装入前缀已经被另一个检查点使用，db2ed_ckptmount 将无提示退出，返回代码为 1。

解决方法：明确地查看 db2ed_ckptmount 返回代码。同时，查看 db2ed_ckptdisplay 的输出。[610283]

在更改端口号时更改 admin.properties 的文件权限

如果在 /etc/vx/vxdbed/admin.properties 中更改通信端口号，则必须使用以下命令将该文件的权限更改为 444：

```
chmod 444 /etc/vx/vxdbed/admin.properties
```

[610437]

DBEDAgent 无法作为集中管理主机启动

如果 DBEDAgent 安装为集中管理主机，将无法启动。

解决方法：在 /etc/vx/isis/Registry 文件中，在 InterfaceFormFILE 和 SecurityFormFILE 条目的 etc 和尾部文件名之间插入一个正斜杠“/”。
"InterfaceFormFILE" = "/opt/VRTSdbcom/etc/interfaceform.xml";
"SecurityFormFILE" = "/opt/VRTSdbcom/etc/securityform.xml";

然后重新启动 DBEDAgent。[610783, 610519]

sfua_db_config 创建两个 /tmp 目录

sfua_db_config 命令创建一个额外的 /tmp 目录，因为第一个 /tmp 目录名实际包含一个尾部回车符，即 /tmp<CR>。这将生成引起混淆的输出：看起来就像有两个 /tmp 目录。

解决方法：删除名称包含尾部回车符的 /tmp。[611944]

db2ed_vmchecksnap grep 错误

db2ed_vmchecksnap 命令有时在输出中多次显示下面的 grep 错误：
grep: 0652-033 无法打开 -
[612220]

sfua_db_config -o startdb 不确认存储库数据库已启动

sfua_db_config -o startdb 命令不输出指示 SFDB 存储库数据库是否已成功启动的消息。

解决方法：通过随后运行以下命令来检查启动成功还是失败：

```
sfua_db_config -o dbstatus  
[613681]
```

卸载克隆数据库和删除检查点命令似乎挂起

db2ed_clonedb -o umount 命令有时似乎挂起。查看进程堆栈时，它正在执行命令 db2ed_dbprocli。

另外，在删除现有检查点时，如果您已经运行了许多检查点命令，vxpal -a DBEDAgent 进程将开始占用大量处理空间，并且 CLI 似乎挂起。

解决方法：对于任何一种情况，通过以根身份运行以下命令来停止 vxpal -a DBEDAgent 进程：

```
/etc/init.d/vxpal.DBEDAgent stop  
/etc/init.d/vxpal.DBEDAgent start
```

[614055, 614815]

连接到 4.1 主机时，不支持通过 Web GUI 进行的统计任务

连接到 4.1 主机时，不支持通过 Web GUI 运行统计任务。如果尝试运行“创建统计任务”，将收到以下错误信息：

错误 V-40-49408-42 - 不存在该对象的具有指定的唯一标识符的界面。

[615819]

取消配置 SFDB 存储库之前，had 必须正在运行

要使用 sfua_db_config 在 VCS 环境中取消配置 SFDB 存储库，请确保 had 进程正在 sfua_db_config -o unconfig_cluster 所运行的系统中运行。

如果 had 进程不在该系统中运行，sfua_db_config 将不会删除存储库 VCS 服务组 Sfua_Base。 [616387]

Veritas Storage Foundation for Sybase 中的已知问题

以下是在此 Veritas Storage Foundation for Sybase 版本中的已知问题。

转换为非 VxFS QIO 文件

如果 mkqio.dat 文件包含任何不在 VxFS 文件系统中的文件，qio_convertdbfiles -u 命令将不会把任何 QIO 文件转换回原始文件。

解决方法：手动编辑 mkqio.dat 文件，并从列表中删除任何非 VxFS 文件。
[413352]

推荐的日志文件大小

警报日志和任务日志中的最大文件大小的默认值各为 1953 Kb。虽然可以将它们增加到 8 位数的最大值 (99999999)，但该最大值并无实际意义，并且可能导致发生问题。确保有可用于您设置的最大日志文件大小的足够空间，并且所用的设置不会对性能造成负面影响。[578688]

由于区域设置不同，SFDB 命令可能会失败

如果执行 SFDB 命令时使用的区域设置与启动 SFDB 服务器时所用的区域设置不同，则命令可能会失败，消息如下：

([Sybase] [ODBC 驱动程序] [Adaptive Server Anywhere] 语法错误)。

解决方法：执行以下命令以更正该问题。

```
/opt/VRTSdbcom/bin/sfua_db_config -o stopserver  
/opt/VRTSdbcom/bin/sfua_db_config -o startserver  
/opt/VRTSdbcom/bin/sfua_db_config -o startdb
```

[582069]

在 Solaris 10 CDE 桌面上使用日语 UTF-8 输入时，VEA 客户机崩溃。

在 Solaris 10 CDE 桌面上使用 ja_JP.UTF-8 区域设置运行 VEA 客户机时，多次更改为日语输入会导致 VEA 客户机崩溃，并出现以下 Java 错误。

HotSpot 虚拟计算机检测到意外错误：

SIGSEGV (0xb)，位于 pc=0xf882d840，pid=xxxxxx，tid=xx

有问题的框架：

C [xiiimp.so.2+0x1d840]

这是与 JRE1.5 有关的 Solaris 问题。

解决方法：要避免在 ja_JP.UTF-8 区域设置下使用 CDE 桌面时出现此问题，请从 CDE 工作区菜单中为日语输入法选择 ATOK16 或 Wnn6，然后重新登录到 CDE 会话。[601693]

sfua_db_config -o startdb 不确认存储库数据库已启动

sfua_db_config -o startdb 命令不输出指示 SFDB 存储库数据库是否已成功启动的消息。

解决方法：通过随后运行以下命令来检查启动成功还是失败：

```
sfua_db_config -o dbstatus
```

[613681]

取消配置 SFDB 存储库之前，had 必须正在运行

要使用 `sfua_db_config` 在 VCS 环境中取消配置 SFDB 存储库，请确保 had 进程正在 `sfua_db_config -o unconfig_cluster` 所运行的系统中运行。

如果 had 进程不在该系统中运行，`sfua_db_config` 将不会删除存储库 VCS 服务组 `Sfua_Base`。[616387]

可用的文档

安装过程完成后，可在 `/opt/VRTS/docs` 目录下联机使用文档。这些文档以 Adobe 便携文档格式 (PDF) 文件提供，并采用可搜索的 HTML 格式。要查看或打印 PDF 文档，必须安装 Adobe Acrobat Reader。

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以下手册和联机帮助共同构成 Veritas Storage Foundation 文档集：

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《Veritas Storage Foundation 和高可用性入门指南》	getting_started.pdf
《Veritas Storage Foundation 发行说明》（本文档）	sf_notes.pdf
《Veritas Storage Foundation 安装指南》	sf_install.pdf
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《Veritas Storage Foundation Cross-Platform Data Sharing 管理员指南》	sf_cds_admin.pdf
《Veritas Enterprise Administrator 用户指南》	veax6_users.pdf
《Veritas Volume Manager 故障排除指南》	vxvm_tshoot.pdf
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《Veritas File System 管理员指南》	vxfs_admin.pdf
《Veritas File System 编程人员参考指南》	vxfs_ref.pdf

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Veritas Storage Foundation for Databases 文档更改

5.0 版本为引入了两本新的 GUI 指南，即《Veritas Storage Foundation for Oracle 图形用户界面指南》和《Veritas Storage Foundation for DB2 图形用户界面指南》。它们分别是 Veritas Storage Foundation 文档集中的文件 sf_ora_gui.pdf 和 sf_db2_gui.pdf。

Veritas Cluster Server 文档

以下 Veritas Cluster Server 文档可通过所有 Veritas Storage Foundation HA 产品套件获得：

指南标题	文件名
《Veritas Cluster Server 发行说明》	vcs_notes.pdf
《Veritas Cluster Server 安装指南》	vcs_install.pdf
《Veritas Cluster Server 用户指南》	vcs_users.pdf
《Veritas Cluster Server Agent 开发人员指南》	vcs_agent_dev.pdf
《Veritas Cluster Server 捆绑代理参考指南》	vcs_bundled_agents.pdf
《Veritas Cluster Server SunFire 12K/15K 应用说明》	vcs_appnote_f15k.pdf
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手册页

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ACE (The Adaptive Communication Environment)

TAO

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Expat XML Parsing Library

Author: James Clark.

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MD5.h

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JavaTip87: Automate the Hourglass Cursor

Kyle Davis

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