

# Veritas™ Volume Replicator リリースノート

Solaris

5.0

# Veritas Volume Replicator リリースノート

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Veritas Volume Replicator 5.0

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### ライセンスと登録

Veritas Volume Replicator はライセンスが必要な製品です。ライセンスのインストールについては、『Veritas Volume Replicator インストールガイド』を参照してください。

### テクニカルサポート

製品のサポートを受けるには、<http://support.veritas.com> ページへアクセスし「Phone Support」または「E-mail Support」をクリックします。このページから TechNote、Software Alerts、ソフトウェアのダウンロード、ハードウェア互換性リスト、VERITAS Email Notifications サービスなどにアクセスすることもできます。「Knowledge Base Search」機能を使用し、製品ドキュメントのリリースなどの製品情報へアクセスすることができます。



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## 付録 A

### サードパーティ（第三者）製ソフトウェアの権利に関する通知

# Veritas Volume Replicator リリースノート

シマンテック社の Veritas Volume Replicator (VVR) はライセンス製品であり、Veritas Volume Manager (VxVM) に対するアドオン機能です。このマニュアルには、Solaris 用の Veritas Volume Replicator のリリース情報と『Veritas Storage Foundation リリースノート』の追加の情報が記載されています。

VVR には Veritas Enterprise Administrator for VVR (VVR VEA)、Veritas Volume Replicator Web Console (VRW) および Veritas Cluster Server (VCS) Agents for Veritas Volume Replicator (VVR) が含まれています。VVR には Veritas Volume Replicator Advisor (VRAdvisor) も含まれています。これは、最適な Veritas Volume Replicator 設定の決定を支援する計画ツールです。本書では、VVR VEA、VRW、VCS Agent for VVR、VRAdvisor に関する情報を取り上げます。

VVR をインストールするには、事前にこのマニュアルに目を通してください。このリリースに関する追加情報については、4 ページの「[必須パッチ](#)」を参照してください。

Veritas Volume Replicator は、32 ビットバージョンと 64 ビットバージョンの Solaris 8、Solaris 9、Solaris 10 オペレーティングシステム (SPARC プラットフォーム) をサポートしています。

## 新機能

このリリースの Veritas Volume Replicator には、次の機能が含まれます。

### ボリュームセットのレプリケーション

VVR で、RVG の一部としてボリュームセット自体を含めることで、ボリュームセットのレプリケーションがサポートされるようになりました。RVG にボリュームセットを含めると、レプリケーションされたボリュームセット設定の一貫性が VVR によってプライマリとセカンダリ間で保たれます。

### CDS

Veritas Volume Replicator (VVR) は、CDS (Cross-platform Data Sharing) 準拠になりました。VVR は、CDS 形式を使って次の機能をサポートします。

- データの保持に使われる物理デバイスに各システムが直接アクセスできる異機種混在システム間 (プライマリまたはセカンダリのいずれか) でのデータの移行。CDS では、複数のプラットフォームからのデータを同時に使うことはできない点に注意してください。

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**注意:** ホスト間でデータを移行する前に、そのディスクグループで実行しているアプリケーションをすべて停止してください。そうしないと、データ消失が発生する可能性があります。

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- 異機種混在システム間でのデータのレプリケーション。つまり、プライマリホストのプラットフォームがセカンダリホストとは異なる場合に、各ホストが CDS 形式のデータにアクセスできます。

### バンカーレプリケーション

バンカーレプリケーションにより、VVR はアプリケーションの処理効率に大きな影響を与えずに RPO (Recovery Point Objective) と RTO (Recovery Time Objective) を完全に達成できます。バンカーレプリケーションはバンカーサイトを使います。これは、プライマリ SRL のコピーだけを維持し、データボリュームの追加のコピーを維持する必要がありません。この機能は、同期レプリケーションモードと非同期レプリケーションモードの利点を兼ね備えています。

### クラスタサポートの強化

VVR は 4 ノードクラスタアプリケーションをサポートします。



## VVR VEA 機能

VVR VEA を使ってバンカーにレプリケートし、それをディザスタリカバリに使うことができます。

## Web GUI を使った VVR の管理

VVR の Web GUI では、次の新機能を備えています。

- ボリュームビューへのリンクにより、RDS 内のローカルボリュームについての詳しい情報にアクセスできます。
- 新しいルックアンドフィールにより、Veritas Storage Foundation 製品間の一貫性が保たれます。
- 役割に基づく新しい管理モデルにより、ストレージ管理者、ストレージオペレータ、読み取り専用などの事前に割り当てた役割に従って管理タスクへのアクセスを制御できます。

## VVR の集中型管理

Storage Foundation Management Server から、VVR の集中型管理を行えます。詳しくは、Storage Foundation Management Server のマニュアルを参照してください。

## Veritas Volume Replicator Advisor

- 複数の RVG 設定用の SRL サイズの計画 : VRAdvisor では、同じ設定内の、同じネットワーク帯域幅を共有する複数の RVG 用に SRL サイズを計画できるようになりました。帯域幅スロットル機能を使って、VVR がレプリケーションに使う最大ネットワーク帯域幅を制御します。これにより、VVR や他のアプリケーションが帯域幅を有効に利用できます。結果はグラフ表示の概略ビューに表示されます。
- 共有ディスクグループ環境における SRL サイズの計画 : VRAdvisor では、共有ディスクグループ環境で、CVM クラスタに対して SRL サイズを計画できるようになりました。共有ディスクグループの場合、CVM クラスタの各ノードでリモートからデータを収集し、書き込み転送を最小限にすることができます。

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**メモ :** このリリースの VRAdvisor では、CVM 以外のクラスタはサポートされません。

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- 拡張されたデータ収集機能 : VRAdvisor のデータ収集ウィザードが、複数のホストのデータを同時に収集するように拡張されました。このようなホスト

は、スタンドアロンホストまたは CVM クラスタ内のノードのいずれかになります。VxVM が存在するかどうかと、使われているオペレーティングシステムに応じて、データ収集ウィザードで自動的に適切なデータ形式を選択し、ネイティブのデータ形式を CSV（カンマ区切り変数）形式に変換することもできます。

- ネットワーク統計の収集 : VRAdvisor では、VRAdvisor ウィザードの追加オプションからネットワーク分析情報を提供できるようになりました。このオプションでは、TCP プロトコルと UDP プロトコルの比較可能なネットワーク処理速度のデータとともに、推定ネットワーク遅延時間、パケット破棄率、使用可能なネットワーク帯域幅などの情報が提供されます。

Veritas Volume Replicator Advisor について詳しくは、dvd1/depot ディレクトリ内の VRTSvrdoc パッケージに収録されている『Veritas Volume Replicator Advisor ユーザーズガイド』（vvr\_advisor\_users.pdf）を参照してください。

## 必須パッチ

パッチ情報は製品リリース時のものです。Solaris パッチの最新の情報については、Sun Microsystems 社にお問い合わせください。

- VVR のパッチ  
Solaris 10 の場合、VVR には Solaris パッチ 119254-06 が必要です。  
Solaris の追加パッチ必要条件については、『Veritas Storage Foundation リリースノート』を参照してください。  
VVR には、VVR パッチ 122058-01 が必要です。このパッチは、Veritas 製品のインストーラまたは installvvr スクリプトを使って VVR 5.0 のインストールやアップグレードを行うと、自動的にインストールされます。ただし、pkgadd コマンドを使って手動の手順でインストールやアップグレードを行う場合は、このパッチを手動でインストールする必要があります。詳しくは、volume\_replicator/patches ディレクトリの README-122058-01 ファイルを参照してください。
- VCS Agents for VVR のパッチ  
VCS Agents for Veritas Volume Replicator にはパッチを適用する必要はありません。詳しくは、『Veritas Cluster Server リリースノート』を参照してください。
- VVR VEA と VRW のパッチ  
VVR VEA と VRW は Java Runtime Engine (JRE) 1.5 に依存します。オペレーティングシステムに、JRE を実行するために必要なパッチがインストールされていることを確認してください。詳しくは、オペレーティングシステム製造元の Web サイトにアクセスしてください。

## サポートの終了

このリリースの VVR は Solaris 7 オペレーティングシステムをサポートしていません。

## インストールの注意点

以下では、製品をインストールする際のガイドライン、ヒント、その他の特記事項を示します。VVR のアップグレードとインストールについては、『Veritas Volume Replicator インストールガイド』を参照してください。

## ライセンスキーの取得

VVR をインストールする前に、Veritas Volume Replicator のライセンスキーを取得します。すでに Veritas Volume Manager のライセンスキーを取得していても、それとは別に VVR のライセンスキーを取得する必要があります。詳しくは、『Veritas Storage Foundation インストールガイド』のライセンス情報に関する項を参照してください。

## 互換性に関する特記事項

### VVR

このリリースの VVR は、Solaris 8、Solaris 9、Solaris 10 のオペレーティングシステム（SPARC プラットフォーム）にインストールできます。Solaris 10 はゾーン機能を備えています。VVR はグローバルゾーンのみでサポートされています。VVR は非グローバルゾーンでは実行できませんが、データがグローバルゾーン内の VxVM ボリュームにある場合には、VVR は非グローバルゾーン内で動作しているアプリケーションをサポートすることができます。たとえば、アプリケーションが非グローバルゾーン内の Veritas File System にマウントされ、ファイルシステムがグローバルゾーン内の VxVM ボリュームを使っている場合には、VVR を使って、そのようなアプリケーションのデータをレプリケートすることができます。

これらのオペレーティングシステムの 32 ビットバージョンと 64 ビットバージョンをサポートしており、32 ビット環境のシステムと 64 ビット環境のシステム間でレプリケーションを実行できます。つまり、32 ビット環境と 64 ビット環境のシステムを混在させたレプリケーション環境を構築することが可能です。32 ビット環境と 64 ビット環境を切り替えながら稼動するホストでの VVR の動作を検査済みです。

VVR はインターネットプロトコル（IP）バージョン IPv6 をサポートしていません。VVR 環境のノードはすべて、IPv4 を使う必要があります。

VVR は、VVR 5.0 および VVR 4.1 MP1 以降が稼動しているシステム間でのレプリケーションをサポートしています。つまり、VVR 5.0 を使うプライマリホストと、VVR 4.1 MP1 を使うセカンダリホスト（またはその逆）の間で、双方向にレプリケーションが可能です。これにより、プライマリとセカンダリの VVR を異なる時間にアップグレードできます。

VVR は共有ディスクグループ環境でのレプリケーションをサポートしています。VVR は、Veritas File System (VxFS) および Veritas Storage Foundation for Oracle RAC のクラスタ機能もサポートしています。Veritas File System (VxFS) および Veritas Storage Foundation for Oracle RAC は、別途ライセンスが必要な製品です。現在、レプリケーションのサポートは 4 ノードクラスタアプリケーションに限定されています。

VVR は、SAN ディスクグループ環境でのレプリケーションはサポートしていません。

RVG 内の全ボリュームが ISP ボリュームの場合、VVR では VxVM ISP ボリュームをレプリケーションすることができます。

## VCS Agents for VVR

Veritas Cluster Server (VCS) Agents for Veritas Volume Replicator は、32 ビットバージョンと 64 ビットバージョンの Solaris 8、Solaris 9、Solaris 10 オペレーティングシステム上で実行されている VVR で動作を確認済みです。このエージェントは VCS 5.0 での使用を目的としています。

## VVR VEA

VVR VEA は、Solaris 8、Solaris 9、Solaris 10 のオペレーティングシステムにインストールできます。VVR VEA は、VVR 5.0 がインストールされたホストのみにインストールできます。

## VRW

VRW は、Solaris 8、Solaris 9 および Solaris 10 のオペレーティングシステムにインストールできます。

VRW は、VVR 5.0 がインストールされたホストのみにインストールできます。また、VRW には Web Server for Storage Foundation Host Management がインストールされている必要があります。

## Web ブラウザの必要条件

VRW を実行するためには、プラットフォームに応じて次の Web ブラウザのいずれかが必要です。

表 1-1 Web ブラウザとサポート対象のプラットフォーム

オペレーティングシステム	Firefox 1.0.7 (以降)	Internet Explorer 5.5 (以降)	Mozilla 1.6 (以降)	Netscape Navigator 7.0 (以降)
AIX			✓	
HP-UX			✓	
Red Hat	✓		✓	✓
Solaris			✓	
SUSE	✓		✓	✓
Windows	✓	✓		✓

使用するブラウザは、JScript 5.5 (Microsoft Internet Explorer 6 以降に付属) または JavaScript 1.2 (Netscape Navigator 7.x に付属) をサポートしている必要があります。さらに、Internet Explorer の場合、SSL 3.0 ActiveX スクリプトを有効にする必要があります。

ポップアップブロック (Yahoo ツールバーや Google ツールバーを含む) を使っている場合は、それらを無効にするか、接続先の Web サーバーからのポップアップを受け入れるように設定します。Netscape 7.2 のデフォルトでは、ポップアップブロックが有効にされていることに注意してください。

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**メモ :** Windows Server 2003 (Server と Advanced Server) で動作する Internet Explorer 6.0 の場合、デフォルトのイントラネットゾーンのセキュリティレベルを中以下に設定してください。

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## VRAdvisor

Veritas Volume Replicator Advisor (VRAdvisor) for Solaris は VVR 3.5 for UNIX 以上と互換性があります。VRAdvisor のインストールには、Windows Installer 2.0 以上が必要です。VRAdvisor でサポートされているオペレーティングシステムは次のとおりです。

- Solaris 8 以降 (SPARC プラットフォーム)
- Windows XP
- Windows 2000 Professional、Windows 2000 Server、Windows 2000 Advanced Server、Windows 2000 Datacenter Server
- Windows Server 2003: Standard Edition、Web Edition、Enterprise Edition、Datacenter Edition

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**メモ:** システムで Windows 2000 を使っている場合は、Service Pack (SP) 4 がインストールされている必要があります。

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## 修正済みの問題

5.0 リリースでは次の問題が修正されました。

### インストールの問題

#### **VRTSob パッケージの不完全なインストールにより VRTSvrpro に問題が発生する (284853)**

VRTSob パッケージをインストールした直後に VRTSob パッケージのパッチ 115209-16 をインストールしないと、VRTSvrpro パッケージが適切にインストールされませんでした。この問題は修正されています。

#### **ライセンスパッケージがローカルゾーンから完全に削除されない**

Veritas ライセンスパッケージ (VRTSvlic) の一部のファイルは、VRTSvlic が最初にインストールされた後に作成されたローカルゾーンから削除できないことがありました。この問題は修正されています。

### vradmin の問題

#### **ボリュームと RVG の同期 : 出力に不正なボリュームサイズが表示されることがある (306656)**

vradmin syncrvg および vradmin syncvol コマンドの出力では、データボリュームのサイズが大きい場合、誤ったサイズが表示されることがあります。この問題は修正されています。

#### **SRL のサイズ変更**

vradmin resizesrl コマンドを使って、アプリケーションがアクティブでレプリケーションが進行中の場合でも、セカンダリの SRL のサイズを拡張できるようになりました。SRL のサイズ変更の手順について詳しくは『Veritas Volume Replicator 管理者ガイド』を参照してください。

#### **SRL のサイズ変更中に VVR がハングアップする**

特定の条件下で、vradmin resizesrl コマンドの実行中に VVR がハングアップしました。この問題は修正されています。[497131]

#### **複数のセカンダリを含む RDS での移行の実行**

複数のセカンダリを保持する RDS (Replicated Data Set) の場合、vradmin migrate コマンドによって、新しい RDS が自動的に再設定されるようになりました。

## SRL の問題

### SRL サイズの変更機能の制限

自動同期または DCM 再生が進行中のときに SRL のサイズを変更できるようになりました。また、SRL サイズの変更操作で、チェックポイント情報が保持されるようになりました。[310204]

## 共有環境でのレプリケーションに関する問題

### ログ所有者が別のホストにフェールオーバーした後で RLINK が接続に失敗することがある (346443)

共有ディスクグループ環境の特定の条件下で、ログ所有者がクラスタ内の別のホストにフェールオーバーした後で RLINK が接続に失敗することがありました。この問題は修正されています。

### 読み込み / 書き込みの実行中にクラスタを再設定すると、VxVM の処理が停止する (288062)

共有ディスクグループでレプリケーションしている場合、I/O の実行中にクラスタの再設定を実行すると、プライマリクラスタのマスターノードに対する Volume Manager の処理が停止することがありました。この問題は修正されています。

### 自動同期の実行中にクラスタを再設定すると、VxVM および VVR の処理が停止する (283929)

共有ディスクグループでレプリケーションを実行しているとき、プライマリクラスタを自動同期中に再設定すると、プライマリクラスタでの VxVM と VVR の処理が停止する場合があります。この問題は修正されています。

### 特定のテストケースにおいて、ときどきスレーブノードでパニックが発生する (288061)

I/O 負荷が大きかったり、クラスタの再設定が複数回行われるテストケースでは、ときどきスレーブでパニックが発生したり、スレーブの I/O が停止することがありました。この問題は修正されています。

### 共有ディスクグループでは Solaris と AIX 間のレプリケーションはサポートされていない

Solaris と AIX の間で、共有ディスクグループでのレプリケーションがサポートされるようになりました。

### ログ所有者の移動後に VVR はハングアップする

共有環境で、ログ所有者がスレーブとマスターの間で繰り返し移動されると、VVR がハングアップすることがありました。この問題は修正されています。[496922]



## 既知の問題

製品をインストールする前に、今回のリリースの更新、パッチ、およびソフトウェアの問題に関する最新情報について、Veritas テクニカルサポートの次の TechNote をお読みください。

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

このリリースでは次の問題が報告されています。

## インストールの問題

### VCS Agents for VVR (42381)

すでに VCS Agents for VVR がインストールされているシステムに、VVR をインストールするために、installvvr スクリプトを使った場合、このスクリプトはシステムに VVR がインストール済みと判断してしまいます。このスクリプトは他の VVR パッケージを確認しないため、誤った結果を表示する場合があります。この場合、VVR に必要な一部のパッケージがシステムに存在しなくても、そのパッケージはインストールされないことがあります。

解決策 : pkgadd コマンドを使って、インストールされていない VVR パッケージを手動で追加します。

**製品のインストール中に /etc ディレクトリでのパーミッションが変わる**  
pkgadd コマンドに存在する Solaris のバグのため、/etc ディレクトリでのパーミッションが、シマンテック社製品パッケージのインストール中に変わる場合があります。インストール手順の後に、この現象が発生したかどうかを調べてください。パーミッションを再設定するには、chmod コマンドを使います。

### インストール中にソフトウェアディスクを取り出せない

インストール中に、いずれかの製品が設定され、起動されると、ソフトウェアディスクを取り出せません。これにより、次の状況でインストールを続行できないことがあります。

- 関連付けられたパッケージをインストールできるように言語パックディスクをロードする必要がある場合。
- インストールを完了するためにシステムの再起動が必要でない製品がインストールされた場合。

これは、インストールを完了するためにシステムの再起動が必要な製品のインストールまたはアップグレードが行われた場合は問題になりません。

インストール時にこの問題を回避するには

- 1 installer スクリプトに、その他のオプションに加えて `-installonly` オプションを指定します。
- 2 ソフトウェアディスクを取り出します。
- 3 `-configure` オプションが指定されている installer スクリプトを実行します。

ソフトウェアディスクを取り出せない場合

- 1 イベントソースデーモンを停止します。  

```
# /usr/sbin/vxddladm stop eventsource
```
- 2 `kill -9` コマンドを使って、`vxcached`、`vxrelocd`、`vxnotify` の各プロセスを停止します。このコマンドには、`ps` コマンドで報告された各プロセスの ID を指定します。
- 3 ソフトウェアディスクを取り出します。
- 4 VxVM デーモンプロセスを再起動します。  

```
# /usr/sbin/vxddladm start eventsource  
# /etc/vx/bin/vxcached  
# /etc/vx/bin/vxrelocd
```

[622442]

## サポートおよび互換性の問題

### VxFS コマンドの実行 (135938)

VxFS コマンドは、次の条件下では、実行速度が非常に遅くハングアップしたように見えることがあります。

- RLINK が同期モードである
- ネットワークの帯域幅が狭い
- VxFS に非常に大きなキャッシュがある

この問題が発生した場合は、テクニカルサポートにお問い合わせください。

### VxVM ISP ストライプ化ミラーボリュームを RVG に関連付けできない

種類がストライプ化ミラーである VxVM ISP ボリュームは RVG に関連付けることができません。[497136]

## vradmin の問題

### 複数の vradmin コマンド (304827)

バックグラウンドで同時に複数の vradmin コマンドを実行すると、一部のコマンドが失敗する可能性があります。

### 不正な設定 (304859)

vradmin printrvg コマンドは、local\_host 属性および remote\_host 属性に RDS にないホストの名前が含まれていても、引数が不正であることを示すエラーメッセージを表示しません。

### 不正なライセンス (139302)

vradmin コマンドで設定を変更する際に、VVR ライセンスの有効期限が過ぎていると、設定完了前に失敗する場合があります。変更を取り消そうとしても、ライセンスの有効期限が過ぎているため、変更を取り消せない場合があります。

### ボリュームと RVG の同期 : ユーザーがオフセットを指定できない (306135)

vradmin syncrvg および vradmin syncvol コマンドでは、ユーザーは同期操作のオフセットを指定できません。データボリューム全体に対して操作が実行されます。操作が終了したら、もう一度やり直す必要があります。

### データの検証 (306479)

vradmin verifydata コマンドは、特定のイベントが発生したときに停止する可能性があります。具体的には、コマンドの実行から終了までの間に、ネットワークの切断が発生した場合や、プライマリに大量の書き込みが発生して RLINK が DCM モードになった場合などです。

解決策 : SIGTERM シグナルを使って vradmin verifydata コマンドを停止します。コマンドラインから ^c を入力し、セカンダリホストで次の手順を実行します。

- 1 次のコマンドを実行します。  

```
# vxibc -g dg_name status rvg_name
```

1 つ、または複数のアプリケーション ID が出力されます。
- 2 VD で始まるアプリケーション ID を選択し、この app-id を次の手順で使います。
- 3 次のコマンドを実行します。  

```
# vxibc -g dg_name stoprecv app-id rvg_name
```
- 4 次のコマンドを実行します。  

```
# vxibc -g dg_name unregister app-id rvg_name
```

コマンド vxibc -g dg\_name status rvg\_name の出力では、app-id が表示されなくなります。

### SRL のサイズ変更

`vradmin resizesrl` コマンドを使うと、アプリケーションがアクティブな場合、またはレプリケーションが進行中の場合でも、SRL のサイズを拡張できます。`vradmin resizesrl` コマンドを使って、SRL のサイズを縮小することはできません。SRL のサイズ変更の手順について詳しくは『Veritas Volume Replicator 管理者ガイド』を参照してください。

### vradmin 出力での区切り文字の表示 (306642)

`vradmin -l printrvg` の出力の区切り文字は、ローカライズされていません。常にカンマ (,) として表示されます。

### 4.1 プライマリがある RDS への 5.0 セカンダリの追加 (423878)

RDS に 4.1 プライマリと 5.0 セカンダリが混在する場合、`vradmin addsec` コマンドを使ってさらに 5.0 セカンダリを RDS に追加することはできません。最初にプライマリを 5.0 にアップグレードしてから、セカンダリを追加してください。

## RVG と RLINK の問題

### RVG 名のサイズ (304979)

RVG 名とリモートホスト名が合わせて 26 文字を超える場合、`vradmin addsec` コマンドでは、超過分を切り捨てて、新規の RLINK に名前を設定します。この処理によって、別の RLINK 名とコンフリクトし、エラーが発生する可能性があります。

このエラーを回避するには、`vradmin addsec` コマンドで `prlink` 属性および `srlink` 属性を使います。

### RLINK 名 (151336)

`vxmake rlink` コマンドは、ホスト名の長さが 31 文字以上の場合に失敗します。

### vxrlink stats コマンドからの出力 (583456)

場合によっては、`vxrlink stats` コマンドの [送信ブロック数 (Number of blocks sent)] 列の出力が文字化けすることがあります。この問題は、VVR が解放されたメモリにアクセスしているために起こるので、無視してかまいません。

## DCM の問題

### DCM ボリュームから階層ボリュームへの変換 (147490)

DCM 付きボリュームの階層レイアウトへの変換が無事完了した際に、次のエラーメッセージが誤って表示されます。

```
vxvm:vxplex: ERROR: ロックを取得できません: (Failed to obtain locks:)  
temp-P05: 指定したオブジェクトは設定内にありません。  
(no such object in the configuration)  
temp-P06: 指定したオブジェクトは設定内にありません。  
(no such object in the configuration)  
vxvm:vxassist: ERROR: ログプレックスをボリューム <volume-name> に  
追加できませんでした (Could not attach log plex (es) to volume  
<volume-name>)
```

### 書き込みを DCM に記録するときのエラー (146293)

書き込みが DCM に記録されるときに、vxrlink updates コマンドの出力は次のようになります。

```
vxvm:vxrlink: INFO: rlink <rlink rlinkname> で、DCM を使用中です。(DCM  
is in use on rlink <rlinkname>) DCM には <number> KB の容量があります。  
(DCM is in use on rlink <rlinkname>. DCM contains <number> Kbytes.)  
この数値が DCM オブジェクトの物理サイズよりも大きいため、メッセージがわ  
かりづらいものとなっています。表示される何 KB という数値は、再同期に必要  
とされるデータの量です。
```

### 再レイアウト中に DCM が削除される (156244)

DCM が設定されたストライプボリュームにカラムを追加する再レイアウトを実行した場合、DCM は削除されます。削除されたことを示すメッセージは表示されません。DCM は次のコマンドを使って再度、設定することが可能です。

```
# vxassist addlog vol logtype=dcm
```

## SRL の問題

### SRL オーバーフロー (152276)

プライマリ SRL でオーバーフローが発生した場合、プライマリ SRL のすべての IBC メッセージはドロップされ、セカンダリに送信されません。

### IBC 中のセカンダリ SRL のエラーにより、保留中の書き込みが失われることがある (541265)

IBC (In-Band Control) でセカンダリデータボリュームへの書き込みが一時停止されると、書き込みはセカンダリ SRL に格納されます。SRL 内にあるこれらの保留中の書き込みは、SRL のミラー化がすべて失敗すると失われる可能性があります。

## テイクオーバーの問題

旧プライマリで SRL の障害が発生した後に高速フェールバックによる同期を実行すると新セカンダリでデータの破損が発生する (284372)

テイクオーバー後に、高速フェールバックによる同期を実行し、新セカンダリ (旧プライマリ) が SRL の障害から復旧すると、SRL の障害が原因で失われた更新が同期されません。これにより、新セカンダリでデータの破損が発生します。この問題を解決するには、セカンダリを完全に同期します。

バンカーからインフライト更新を受信した後、フェールバックプライマリとしてのテイクオーバー中にセカンダリが停止する (598288)

バンカー SRL の書き込み遅延がプライマリ SRL の書き込み遅延と同等である場合、バンカーデータの方がプライマリデータより先にログ記録される可能性があります。「インフライト書き込み」と呼ばれるデータは、プライマリのクラッシュ後にバンカーを使ってセカンダリが同期されるときに、セカンダリにログ記録されます。

ログ記録されたインフライトデータ書き込みが存在するセカンダリがフェールバックプライマリに昇格すると、ログ記録された書き込みはそのデータボリュームにフラッシュされます。ただし、初期化されていないログのエンドポイントのため、しばしば、このセカンダリノードで VxVM がハングアップすることがあります。

## 共有環境でのレプリケーションに関する問題

セカンダリチェックポイントの問題 (607703)

まれに、たくさんのセカンダリチェックポイントが作成されて削除されると、vxrlink cplist コマンドを実行したときに VVR でパニックが発生することがあります。

cache size 属性を指定した verifydata コマンドの使用 (615728)

プライマリに I/O が存在するときに cache size 属性を指定して vradmin verifydata コマンドを使うと、次の状況が発生する可能性があります。プライマリでスナップショットが作成されている間にセカンダリが IBC を受信すると、セカンダリで vxconfigd が停止することがあります。

回避策 : vradmin verifydata コマンドに、cache size 属性ではなく cache 属性を指定します。

ログ所有者がスレーブノードであるときのスナップショットのリストア

まれに、ログ所有者がスレーブノードであるとき、vxrvg snaprestore コマンドによってプライマリノードのデータが破損する可能性があります。リストアコマンドの完了後、データボリュームはバックグラウンドのスナップショットボリュームに再同期されます。この再同期中に、アプリケーションがデータボ

リユームに対して I/O を実行すると、この問題が発生します。問題を回避するには、バックグラウンドの再同期が完了するまでアプリケーション I/O を実行しないようにします。

再同期の状態を表示するには、次の操作を行います。

- 1 taskid と種類を表示するには、次のコマンドを使います。  
`# vxtask -g dname list`
- 2 タスクの進行状況を追跡するには、次のコマンドを使います。  
`# vxtask -g dname monitor taskid`

詳しくは、vxtask のマニュアルページを参照してください。

## VRW の問題

### 日本語版の VRW オンラインヘルプでの検索機能の制限

日本語版の VRW オンラインヘルプで、検索機能が正常に動作しないことがあります。該当する用語がオンラインヘルプに存在しても、その用語が見つからなかったと表示される場合があります。検索結果は、検索で使う文字セットによって異なります。

### マスターにあるプライベートディスクグループ内のプライマリ RVG が表示されない (615758)

CVM マスターノードにプライベートディスクグループが含まれている場合、そのディスクグループ内に作成されたプライマリ RVG が VVR の Web GUI に表示されません。

回避策 : VVR コマンドラインまたは VVR VEA GUI を使って RVG を表示します。

### HP-UX の異なる VVR のバージョン間でレプリケーションを行うときにボリュームサイズが不正に表示される (603945)

HP-UX オペレーティングシステムの VVR 4.1 と VVR 5.0 の間で実行される RDS レプリケーションで、VVR の Web GUI に不正な SRL のサイズとデータボリュームのサイズが表示されることがあります。

### CVM クラスタで、プライマリ作成ウィザードにプライベートディスクグループが表示されない (615769)

CVM クラスタのマスターノードに接続していて、VVR Web GUI を使ってプライマリを作成するときに、プライマリ作成ウィザードで、ディスクグループの選択リストにプライベートディスクグループの名前が表示されません。

回避策 : マスタノードのプライベートディスクグループ内にプライマリ RVG を作成するには、VVR コマンドラインまたは VVR VEA GUI を使います。

### 移行後、[セカンダリ (Secondaries)] タブにセカンダリに関する情報が表示されない (575992)

プライマリのロールをセカンダリに移行した後で、[セカンダリ (Secondaries)] タブにセカンダリ RVG に関する情報が表示されないこともあります。RVG、SRL、データボリュームの情報が空白になることがあります。

回避策: 情報を表示するには、[概略 (Summary)] タブに移動してから、再度 [セカンダリ (Secondaries)] タブに移動します。

### ボリューム追加ウィザードに、関連付けられたボリュームセットが表示される (612927)

ボリューム追加ウィザードに、すでに RVG に関連付けられたボリュームセットが表示されることがあります。1 つのボリュームセットを複数の RVG に関連付けることはできません。

### セカンダリディスクグループのビューが正しく表示されない (615834)

共有ディスクグループ環境では、場合によって、セカンダリディスクグループへのリンクをクリックしてもディスクグループのビューが表示されないことがあります。これは、セカンダリクラスタに、インポートされたディスクグループと同じ名前を持つ、デポートされたディスクグループが含まれている場合に発生する可能性があります。リンクをクリックすると、デポートされたディスクグループのビューが表示される可能性もあります。

回避策: 可能な場合は、同じ名前を持つデポートされたディスクグループを削除します。問題を回避するには、ディスクグループ名が重複しないようにします。

## VVR VEA の問題

### HP-UX の異なる VVR のバージョン間でレプリケーションを行うときにボリュームサイズが不正に表示される (612565)

HP-UX オペレーティングシステムの VVR 4.1 と VVR 5.0 の間で実行される RDS レプリケーションで、VVR VEA GUI に不正な SRL のサイズとデータボリュームのサイズが表示されることがあります。

### 概要のビューで、特定のボリュームレイアウトについて不正なレイアウトとミラーの情報が表示される (600485)

レイアウトが連結ミラーまたはミラー化連結であるボリュームの場合、プライマリ RVG とセカンダリ RVG の概要ビューに、連結ボリュームとして不正なレイアウトが表示されます。ミラーの数も不正な場合があります。



### 日本語ロケールで RDS 作成ウィザードのチェックボックスが正しく表示されない (616618)

日本語ロケールで、RDS 作成ウィザードの [重要な要件 (Important Prerequisites)] ページが正しく表示されません。ダイアログが切り詰められるため、各質問の横にあるチェックボックスが表示されません。

回避策: ニーモニックキーを使って質問に回答してください。

- 最初の質問には、Alt+P を使います。
- 2 番目の質問には、Alt+D を使います。
- 3 番目の質問には、Alt+S を使います。

## ソフトウェアの制限

### ローカルゾーンのサポート

VVR はグローバルゾーンのみでサポートされています。VVR は非グローバルゾーンでは実行できませんが、データがグローバルゾーン内の VxVM ボリュームにある場合には、VVR は非グローバルゾーン内で動作しているアプリケーションをサポートすることができます。たとえば、アプリケーションが非グローバルゾーン内の Veritas File System にマウントされ、ファイルシステムがグローバルゾーン内の VxVM ボリュームを使っている場合には、VVR を使って、そのようなアプリケーションのデータをレプリケートすることができます。

VVR および VxVM コマンドはグローバルゾーンで実行する必要があります。非グローバルゾーンで実行中のアプリケーションをレプリケーションする場合、グローバルゾーン管理者がスナップショットや IBC などのタスクを実行するには、アプリケーションコンテキストが必要です。

### Solaris 10 のゾーン機能の制限

#### アプリケーションコンテキストを必要とするタスクの制限

VVR および VxVM コマンドはグローバルゾーンで実行する必要があります。非グローバルゾーンで実行中のアプリケーションをレプリケーションする場合、グローバルゾーン管理者がスナップショットや IBC などのタスクを実行するには、アプリケーションコンテキストが必要です。

### サポートされていないインターネットプロトコルのバージョン

VVR は IPv6 をサポートしていません。VVR 環境のノードはすべて、IPv4 を使う必要があります。

## RAID 5 ボリューム

VVR は、Volume Manager で作成した RAID 5 ボリュームで RVG を構築することはできません。ハードウェア RAID 5 はサポートされています。

## ディスクグループの分割と結合

VVR は、ディスクグループの分割と結合をサポートしていません。そのため、RVG のデータボリュームに対してディスクグループの分割と結合を使うことはできません。ただし、データボリュームのスナップショットを作成し、そのスナップショットに対してディスクグループの分割と結合を使うことはできます。

## VVR オブジェクトを含むディスクグループのインポート

VxVM オブジェクトに関して説明した問題と同様に、VVR オブジェクトを保持するプライベートディスクグループが 2 つのノードにインポートされた場合、SRL は破損し、セカンダリ全体の再同期が必要になります。

## ブートディスクグループ内のボリューム

ブートディスクグループ (bootdg) でレプリケーションボリュームを作成することは、推奨していません。

## ワイルドカードを使ったレコードの選択

`vxprint -e pattern` コマンド: ワイルドカードを使って RVG レコードと RLINK レコードを選択する方法はサポートされていません。

## セカンダリの追加

セカンダリを RDS に追加する際、追加されるホストで、`vradmin addsec` コマンドを実行することはできません。RDS の構成要素がプライマリのみの場合、このコマンドはプライマリで入力する必要があります。

## 共有環境でのレプリケーションに関する問題

### データボリュームと SRL が共有ディスクにある場合のプライマリ RVG の作成

データボリュームと SRL が共有ディスクグループ上にあるプライマリを作成する場合には、クラスタのマスターノードで `vradmin createpri` コマンドを実行する必要があります。

### データボリュームと SRL が共有ディスクにある場合のセカンダリ RVG の作成

データボリュームと SRL が共有ディスクグループ上にあるセカンダリを RDS に追加する場合、`vradmin addsec` コマンドを実行するには、セカンダリホスト名がセカンダリクラスタのマスターノードで正常に解決でき、アクセス可能である必要があります。

### 共有ディスクグループでは Solaris と HP-UX 間のレプリケーションはサポートされていない

共有ディスクグループでのレプリケーションは、Solaris と HP-UX の間ではサポートされていません。(592349)

## VRW の制限

### フォントサイズの拡大

フォントサイズを大きくすると、ウィザードの表示や移動に問題が発生する場合があります。

### IBC メッセージのサポート

VRW の今回のリリースは、In-Band Control (IBC) メッセージをサポートしていません。

## VCS Agents for VVR の制限

### RVG リソースのオンラインおよびオフライン

現在、Veritas Volume Manager が抱えている問題で、RVG リソースに影響を与えているものがあります。RVG が数多く定義されている場合、Volume Manager に online または offline への切り替えリクエストが頻繁に発行されると、VxVM の `vxconfigd` プロセスに大きな負荷がかかり、処理が追いつかず、RVG の一部がオンラインまたはオフラインへの切り替えに失敗します。

回避策: RVG リソースは、RVG リソースの 1 つのインスタンスだけがオンラインまたはオフライン状態になるように設定されています。この結果、RVG を含むサービスグループのオンラインまたはオフライン化に時間がかかります。

### RVGSnapshot エージェントの制限

ファイアドリル設定 (`fdsetup`) は、1 つのデスクグループのみを使うアプリケーションをサポートします。RVGSnapshot エージェントはボリュームセットをサポートしていません。

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表 1-2 Veritas Volume Replicator と Veritas Volume Manager の  
マニュアルセット

タイトル	ファイル名
『Veritas Volume Replicator リリースノート』 (本書)	vvr_notes.pdf
『Veritas Volume Replicator インストールガイド』	vvr_install.pdf
『Veritas Volume Replicator 管理者ガイド』	vvr_admin.pdf
『Veritas Volume Replicator 計画およびチューニング ガイド』	vvr_planning.pdf
『Veritas Volumes Replicator Advisor ユーザーズガイド』	vvr_advisor_users.pdf
『Veritas Volume Replicator Web コンソール管理者ガイド』	vvr_web_admin.pdf
『Veritas Cluster Server Agents for Veritas Volume Replicator 設定ガイド』	vvr_agents_config.pdf
<b>Veritas Storage Foundation</b>	
『Veritas Storage Foundation リリースノート』	sf_notes.pdf
『Veritas Storage Foundation インストールガイド』	sf_install.pdf
『Veritas Storage Foundation Intelligent Storage Provisioning 管理者ガイド』	sf_isp_admin.pdf
『Veritas Storage Foundation Intelligent Storage Provisioning ソリューションガイド』	sf_isp_solutions.pdf
『Veritas Storage Foundation Cross-Platform Data Sharing 管理者ガイド』	sf_cds_admin.pdf
『Veritas Flashsnap Point-In Time Copy ソリューショ ン管理者ガイド』	flashsnap_admin.pdf
『Veritas Enterprise Administrator ユーザーズガイド』	vea6x_users.pdf

表 1-2 Veritas Volume Replicator と Veritas Volume Manager の  
マニュアルセット

タイトル	ファイル名
<b>Veritas Volume Manager</b>	
『Veritas Volume Manager 管理者ガイド』	vxvm_admin.pdf
『Veritas Volume Manager トラブルシューティングガイド』	vxvm_tshoot.pdf



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TAO

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### Expat XML Parsing Library

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MD5.h

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#### JavaTip87: Automate the Hourglass Cursor

Kyle Davis

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