



XCP文档

XCP

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XCP文档

XCP v1..4发行说明

。 "XCP v1..4发行说明" 描述新功能，升级说明，已修复的问题，已知限制和已知问题。

您需要登录到 NetApp 支持站点才能访问发行说明。

开始使用 XCP

了解 XCP

NetApp XCP是一款基于客户端的软件、可实现可扩展的高性能数据迁移、以实现任意到NetApp以及从NetApp到NetApp的数据迁移和文件分析。XCP旨在通过利用所有可用系统资源来管理海量数据集和高性能数据迁移、实现扩展并提高性能。XCP 可通过生成客户报告的选项帮助您全面了解文件系统。借助匹配和格式设置功能，您可以自定义报告以满足任何报告需求。

使用适用于 NFS 或 SMB 系统的 XCP 作为以下解决方案之一：

- 迁移解决方案
- 文件分析解决方案

XCP 是一个可支持 NFS 和 SMB 协议的软件包，提供命令行软件。XCP 可用作 NFS 数据集的 Linux 二进制文件，也可用作 SMB 数据集的 Windows 可执行文件。

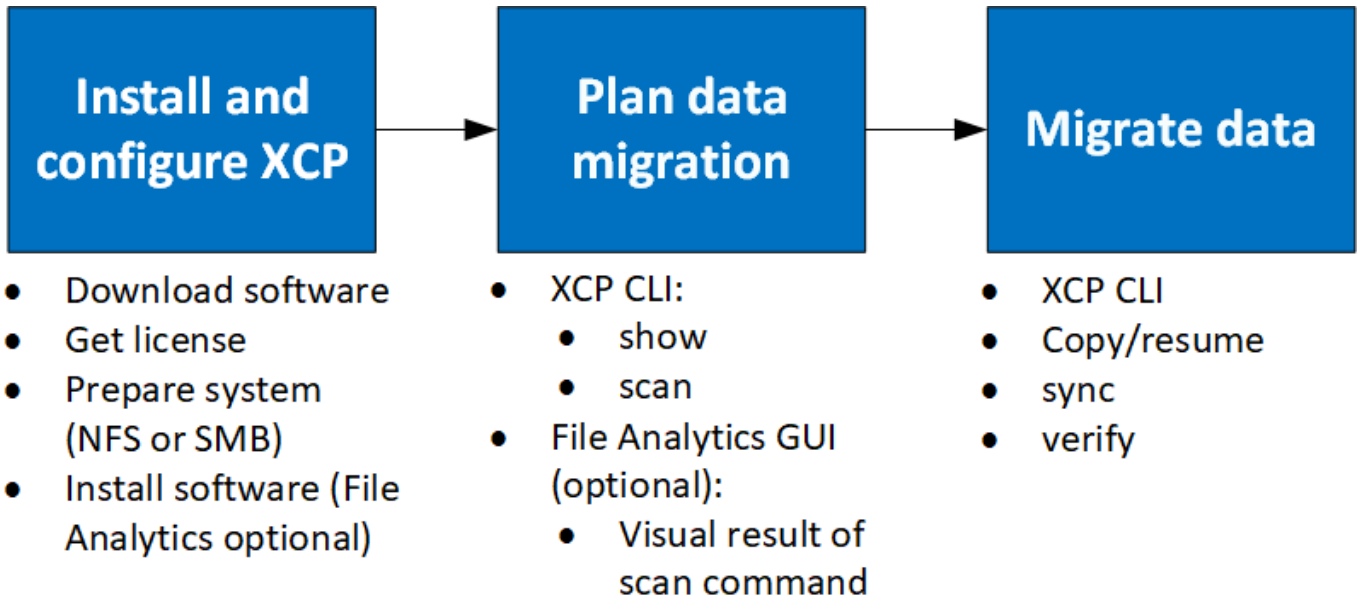
XCP 文件分析是一款基于主机的软件，可检测文件共享，对文件系统运行扫描并提供用于文件分析的信息板。XCP 文件分析适用于 NetApp 和第三方系统，并在 Linux 或 Windows 主机上运行，以便为 NFS 和 SMB 导出的文件系统提供分析。文件分析 GUI 的二进制文件包含在支持 NFS 和 SMB 协议的单个软件包中。



XCP二进制文件具有代码签名。有关详细信息、请参见`NetApp_XCP_<version>.tgz`中的自述文件。

XCP 命令行界面功能强大。有关详细信息，请从上下载 `_XCP 参考` ["XCP 站点"](#)。

- XCP 工作流 *



XCP NFS 附加功能

XCP NFS 附加功能支持使用 POSIX 和 HDFS 连接器，增强安全性，并支持使用横向扩展架构来加快数据迁移速度。

支持 NFSv4

如果仅在数据中心的源卷，目标卷和目录卷上启用 NFSv4，则可以使用 POSIX 路径而不是导出路径来迁移数据。要使用 POSIX 路径，必须先要在运行 XCP 的主机系统上挂载源卷，目标卷和目录卷，然后使用 POSIX 文件路径为 XCP 提供源卷和目标卷。请参见 ["配置 POSIX 连接器"](#)。



- NFSv4 支持仅限于 POSIX 路径和 `copy` 操作，不支持 `sync` 操作。
- 与 XCP NFSv3 TCP 套接字客户端引擎相比，POSIX 连接器可能速度较慢。

POSIX 连接器

XCP 支持使用 POSIX 连接器为数据迁移提供源、目标和目录路径。POSIX 连接器 (`file://`) 使 XCP 能够访问任何 Linux 装载的文件系统，例如 NFSv4、XFS 和 Veritas。对于非 root 用户、系统管理员可以使用带有 `file://` 前缀的 POSIX 连接器挂载文件系统，以使任何非 root 用户都能够访问文件系统。

如果您没有足够的权限挂载文件，或者数据中心提供的支持仅限于 NFSv4，则可以使用 POSIX 连接器。在这种情况下，任何 root 用户都可以挂载源和目标，然后使用 POSIX 连接器访问路径。使用 POSIX 连接器时，只能运行 XCP `copy` 操作。

XCP 安全性

通过 XCP 安全功能，您可以在 Linux 主机上以非 root 用户身份执行迁移。在早期的 XCP 版本中，作为 Linux 计算机上的 root 用户，您可以使用源卷，目标卷和目录卷的所有权限执行迁移，此挂载将通过 XCP 操作完成。

在执行数据迁移之前，通常会关闭安全性并让管理员尽快复制所有内容。对于 XCP 已使用多年的生产环境中的持续过渡，以管理员（或 root 用户）身份运行并不安全。因此，如果不要以 root 用户身份运行 XCP，则可以在安全环境中使用 XCP。当常规非 root 用户运行 XCP 操作时，非 root 用户与用户具有相同的访问权限和限制。

在此安全环境中，root 用户可以将源卷，目标卷和目录卷挂载到主机上，并为非 root 用户写入数据的目标卷和目录卷提供必要的权限。这样，非 root 用户就可以使用 XCP POSIX 连接器功能执行迁移。

XCP 横向扩展

到目前为止，使用 XCP 的数据迁移仅限于 RAM 和 CPU 较高的单个主机。为了加快迁移速度，增加了单个主机上的内存和核心，但复制数 PB 的数据仍可能需要很长时间。XCP 横向扩展架构使您能够使用多个主机执行数据迁移。通过此功能，您可以使用多个 Linux 主机来分布工作负载并缩短迁移时间。

在单个系统的性能不足的任何环境中，您都可以从多节点横向扩展中受益。要克服单个节点的性能限制，您可以使用单个 `copy`（或 `scan -md5`）命令在多个 Linux 系统或 Hadoop 集群节点上运行工作人员。目前，只有 `copy` 命令操作才支持 XCP 横向扩展。

Hadoop 分布式文件系统连接器

XCP 支持将数据从 Hadoop 分布式文件系统（Hadoop Distributed File System，HDFS）文件系统迁移到 NetApp 文件系统，反之亦然。在启用了安全性的 Hadoop 环境中，Hadoop 集群上的非 root 用户可以迁移到 NetApp NFSv4 导出的文件系统。HDFS 连接器（HDFS：//）使 XCP 能够访问不同供应商提供的任何 HDFS 文件系统。非 root 用户可以使用 XCP 通过 HDFS 或 POSIX 连接器执行迁移。

您可以将 HDFS 集群包括在 XCP 横向扩展配置中，因为它们使用多个高端 Linux 计算机。这样可以最大限度地减少对额外 XCP 工作节点的需求。对于数据迁移，您可以选择重复使用 HDFS 集群节点或使用不同的主机。



HDFS 连接器适用于 MapR 和 Cloudera 集群并受其支持，但只能执行基线复制操作。

不支持的功能

XCP NFS 不支持以下功能：

功能名称	Description
IPv6	不支持 IP 版本 6（IPv6）
NFSv4 访问控制列表（ACL）（第三方）	不支持第三方到 NetApp NFSv4 ACL
POSIX 连接器	<ul style="list-style-type: none">• sync 命令不支持 POSIX 连接器• 源处于活动状态时，不应使用 copy 命令
Linux	XCP 1.0.3 支持的早期版本 Linux 不再支持 XCP。
活动源支持	XCP 不支持将基线或增量 Snapshot 副本操作与实时源迁移结合使用。
NFS 到 S3 迁移	XCP 不支持从 NFS 迁移到 S3。

XCP SMB 不支持以下功能：

功能名称	Description
第三方到 NetApp NTFS 访问控制列表 (ACL)	XCP SMB 不支持将第三方 ACL 从非 NetApp 系统迁移到 NetApp 系统。
NFS 符号链接（symlink）	XCP SMB 不支持 NFS 符号链接
用于扫描的 ACL 选项	扫描选项不支持 ACL
IPv6	不支持 IP 版本 6（IPv6）
XCP 筛选器	XCP SMB 排除选项当前会根据目录在筛选器中的模式排除这些目录，并遍历这些目录的文件系统。
实时源迁移	XCP 不支持在迁移期间修改源卷上的数据。
同一主机上的多个 XCP 实例	在同一主机上运行多个 XCP 实例时，可能会出现不可预测的结果。

以下常见功能不适用于 XCP NFS 和 SMB：

- * 完成迁移的时间 *：XCP UpFront 不提供完成迁移的时间或完成任何用于迁移的命令的时间。如果要执行最终转换，请确认源卷上的数据流失率较低。
- * 在未清理的目标上重新运行副本 *：如果目标目标上有部分数据，XCP 基线复制将失败。要成功执行 XCP 基线复制和 XCP 验证，目标必须为 Clean。
- * 实时目标 *：XCP 不支持在迁移期间或增量同步期间修改目标卷上的数据。
- * 文件分析的非 root 用户 *：XCP 不支持由非 root 用户或 sudo 用户执行的安装和配置。

以下功能不适用于Hadoop分布式文件系统(HDFS)连接器：

功能名称	Description
支持 sync 命令	HDFS连接器不支持 sync 命令：
符号链接(符号链接)和硬链接支持	HDFS文件系统不支持符号链接、硬链接或特殊文件。
实时源HDFS迁移	XCP不支持在迁移期间修改源HDFS文件系统上的数据

以下功能不适用于Simple Storage Service (S3)连接器：

- 以S3存储分段作为源的迁移：XCP不支持以S3存储分段作为源的迁移。

支持的配置

中列出了所有 XCP 支持的配置，例如主机， ONTAP 版本和支持的浏览器 ["互操作性表工具 \(IMT\)"](#)。

XCP 使用的端口

XCP 使用以下端口。

服务	Port
CIFS	445 TCP/UDP
HTTP (httpd)	80
HTTPS	443.
NFS	111 TCP/UDP 和 2049 TCP/UDP
PostgreSQL	5432
XCP (作为文件分析服务)	5030
HDFS	7222

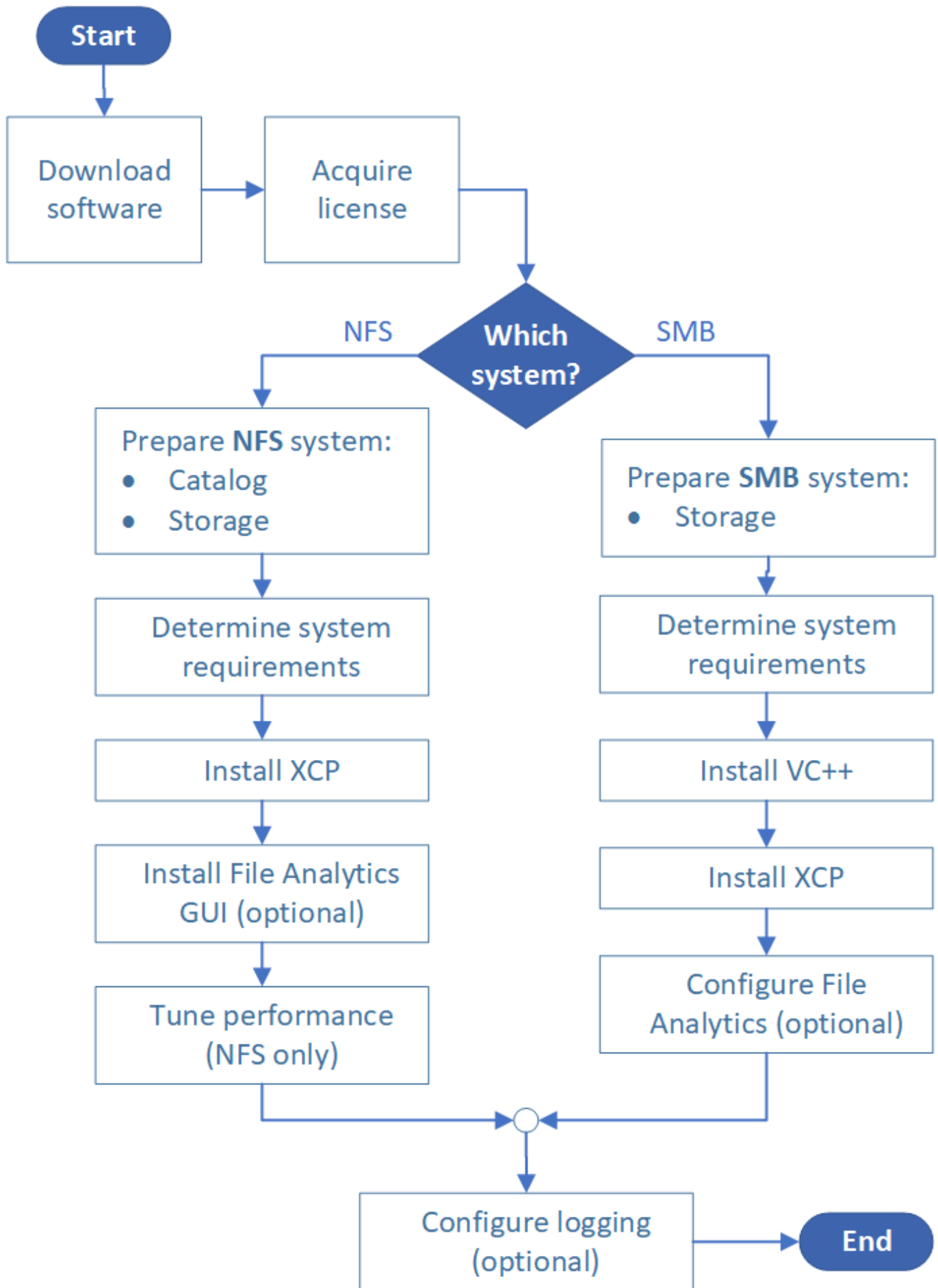
安装 XCP

准备XCP安装

在准备安装时、您需要下载XCP、获取许可证并准备系统。

安装和配置 workflow

本文档介绍了在 NFS 和 SMB 系统上安装和设置 XCP 的简单 workflow。



下载 XCP

从 NetApp 支持站点下载 XCP，并从 XCP 站点获取许可证。

您可以从下载 XCP "[NetApp 支持站点](#)"。

许可证 XCP

NetApp 提供一年免费 XCP 许可证。您可以从获取许可证文件 "[XCP 站点](#)"。许可门户提供了不同的许可选项。一年后、您可以使用同一门户将许可证续订一年。

XCP 许可证可以脱机或联机许可证的形式提供。如果要发送迁移统计信息，请使用联机许可证。联机许可证需要 Internet 连接。脱机许可证不需要 Internet 连接。

要运行 XCP 1.9.3 及更高版本、您必须从获取新的 XCP 许可证 "[XCP 站点](#)"。



XCP 1.9.3 及更高版本不支持与 XCP 1.9.2 及更早版本一起使用的许可证。同样、在 XCP 1.9.2 及更早版本中不支持与 XCP 1.9.3 及更高版本结合使用的许可证。

准备系统

如果您使用的是 ... "[Linux 系统上的 XCP NFS](#)"，您必须准备目录和存储。

如果您使用的是 ... "[Microsoft Windows 系统上的 XCP SMB](#)"，您必须准备存储。

为 XCP NFS 准备 Linux

XCP NFS 使用 Linux 客户端主机系统生成并行 I/O 流，并充分利用可用的网络和存储性能。

您可以为 root 用户和非 root 用户配置设置，然后根据您的设置选择任一用户。

配置目录

XCP 会将操作报告和元数据保存在可通过 NFSv3 访问的目录目录或具有所需权限的任何 POSIX 路径中。

- 配置目录是一次性的安装前活动。
- 每 1000 万个对象（目录加上文件和硬链接）索引大约 1 GB 的空间；可以恢复或同步的每个副本以及每个脱机可搜索的扫描都需要一个索引。
- 要支持性能，包含导出目录的聚合至少需要十个磁盘或 SSD。



您必须单独存储 XCP 目录。它们不能位于源 NFS 导出目录或目标 NFS 导出目录中。XCP 会维护元数据，这些元数据是在初始设置期间指定的目录位置中的报告。在使用 XCP 运行任何操作之前，您必须指定并更新用于存储报告的位置。

配置存储

XCP NFS 过渡和迁移具有以下源和目标存储要求：

- 源服务器和目标服务器必须启用 NFSv3 或 NFS v4.0 协议服务
 - 对于 NFSv4 ACL 迁移，必须在目标服务器上启用 NFSv4 协议服务和 NFSv4 ACL。
- 必须通过 `root` 访问 XCP Linux 客户端主机来导出源卷和目标卷。
- 对于 NFSv4 ACL 迁移，NFSv4 要求对需要迁移 ACL 的卷使用编码语言 UTF-8。



- 为了防止管理员意外修改源卷，您应将 NFSv3 和 NFSv4 导出目录的源卷配置为只读。
- 在 ONTAP 中、您可以使用诊断 `-atime-update` 选项在源对象上保留 `atime`。此功能仅在 ONTAP 中可用，如果您希望在运行 XCP 时在源对象中保留 `atime`，则此功能非常有用。
- 在 XCP 中、您可以使用 `-preserve-atime` 选项在源对象上保留 `atime`。此选项可用于访问源对象的所有命令。

root 用户

Linux 计算机上的 `root` 用户有权挂载源卷，目标卷和目录卷。

非 root 用户

非 `root` 用户需要对已挂载的卷具有以下权限：

- 对源卷的读取权限访问
- 对已挂载目标卷的读 / 写权限访问
- 对目录卷的读 / 写权限访问

为 XCP SMB 准备 Windows

XCP SMB 使用 Windows 客户端主机系统生成并行 I/O 流，并充分利用可用的网络和存储性能。

配置存储

XCP SMB 过渡和迁移具有以下用户登录要求：

- XCP 主机系统：XCP 主机用户必须具有管理员权限(该用户必须属于目标 SMB 服务器上的 "BUILTIN\Administrators" 组)。
- 将迁移或 XCP 主机用户添加到 Active Directory 的审核和安全日志策略中。要在 Windows 10 上查找 "管理审核和安全日志" 策略，请执行以下步骤：

步骤

- a. 打开 * 组策略编辑器 * 对话框。
- b. 转至 * 计算机配置 > Windows 设置 > 安全设置 > 本地策略 > 用户权限分配 *。
- c. 选择 * 更改审核和安全日志 *。
- d. 要添加 XCP 主机用户，请选择 * 添加用户或组 *。

有关详细信息，请参见 ["管理审核和安全日志"](#)。

- 目标存储系统：XCP 主机用户必须具有读写访问权限。
- 源存储系统：
 - 如果用户属于源存储系统中的 " 备份操作员 " 组，则该组的成员可以在绕过安全规则的情况下读取文件，而不管这些文件是否具有任何保护权限。
 - 如果用户不属于源系统中的 " 备份操作员 " 组，则用户必须具有读取访问权限。



要支持 XCP 选项 ` - preserve-atime `，需要在源存储系统中具有写入权限。

配置 Windows 客户端

- 将目标存储箱和源存储箱添加到主机文件：
 - a. 导航到以下位置：` (C : \Windows\System32\drivers\etc\hosts) `
 - b. 以以下格式将以下主机条目插入到文件中：


```
` < 源数据 SVM 数据接口 IP> < 源 CIFS 服务器名称 > < 目标数据 SVM 数据接口 IP> < 目标 CIFS 服务器名称 >`
```

- 示例 *

```
# Copyright (c) 1993-2009 Microsoft Corp.
#
# This is a sample HOSTS file used by Microsoft TCP/IP for Windows.
#
# This file contains the mappings of IP addresses to host names. Each
# entry should be kept on an individual line. The IP address should
# be placed in the first column followed by the corresponding host name.
# The IP address and the host name should be separated by at least one
# space.
#
# Additionally, comments (such as these) may be inserted on individual
# lines or following the machine name denoted by a '#' symbol.
#
# For example:
#
#       xxx.xx.xx.xx           rhino.acme.com           # source server
#       xx.xx.xx             x.acme.com                # x client host

# localhost name resolution is handled within DNS itself.
#       127.0.0.1             localhost
#       ::1                   localhost
#
#       xx.xxx.xxx.xxx       00906A52DFE247F
#       xx.xxx.xxx.xxx       42D1BBE1219CE63
```

准备文件分析

使用文件分析准备数据迁移。

文件分析包括以下两部分：

- 在 Linux 上运行的文件分析服务器
- 在 Windows 上运行的 XCP SMB 服务

文件分析安装具有以下要求：

- 支持的操作系统和系统要求与为 NFS 和 SMB 安装提供的要求相同。由于数据库将驻留在 Linux 机箱上，因此您必须确保至少有 10 GB 的可用空间。
- 安装文件分析服务器的 Linux 计算机必须连接到 Internet 或 yum 存储库。安装脚本将与 yum 存储库进行通信，以下载所需的软件包，例如 PostgreSQL，HTTP 和 SSL。
- 文件分析 GUI 只能与在同一机箱上运行的 Linux XCP 服务一起托管在 Linux 计算机上。
- 要运行 SMB 服务，请完成以下步骤：
 - 验证 Windows 框是否可以对运行文件分析服务器的 Linux 计算机执行 ping 操作。
 - 如果您位于防火墙内，请验证端口 5030 和 5432 是否已打开。端口 5030 用于向 Windows 发出 REST 调用。端口 5432 端口用于 PostgreSQL 连接。



XCP 文件分析服务器始终在 Linux 计算机上运行。SMB 文件分析没有单独安装。如果您是 Windows 用户，并且希望对 SMB 共享运行文件分析，则必须安装适用于 Linux 的文件分析并将 Windows Box 连接到 Linux 数据库。如果您仅使用 XCP 文件分析，则无需为 NFS 配置 XCP 目录。

安装 XCP NFS

本节详细介绍了在 Linux 客户端上首次设置 XCP 以及安装此 ini 文件配置的系统要求和过程。

- 系统要求 *

项目	要求
系统	64位Intel或AMD服务器、至少8个核心和64 GB RAM
操作系统和软件	请参见 "IMT" 支持的操作系统
特殊要求	源 NFSv3 和目标 NFSv3 的网络连接和根级别访问不会导出其他活动应用程序
存储	XCP 二进制文件需要 20 MB 磁盘空间，而 /opt/NetApp/xFiles/XCP/ 目录中存储的日志需要至少 50 MB 磁盘空间
支持的协议版本	NFSv3 和 NFSv4 （ POSIX 和 ACL ）
支持的浏览器（仅限文件分析）	请参见 "IMT" XCP文件分析所有受支持浏览器版本的列表。



实时源迁移的建议配置为 8 个核心和 64 GB RAM 。

为 root 用户安装 XCP NFS

您可以使用以下操作步骤为 root 用户安装 XCP。

步骤

1. 以 root 用户身份登录到 Linux 计算机，然后下载并安装许可证：

```
[root@scspr1980872003 ~]# ls -l
total 36188
-rw-r--r--  1 root root 37043983 Oct  5 09:36 NETAPP_XCP_<version>.tgz
-rw-----  1 root root      1994 Sep  4 2019 license
```

2. 要提取此工具，请解压缩 XCP：

```
[root@scspr1980872003 ~]# tar -xvf NETAPP_XCP_<version>.tgz
[root@scspr1980872003 ~]# ls
NETAPP_XCP_<version>.tgz license xcp
[root@scspr1980872003 ~]# cd xcp/linux/
[root@scspr1980872003 linux]# ls
xcp
```

3. 验证先前版本 XCP 中的系统是否提供了 `/opt/NetApp/xFiles/XCP` 路径。

如果提供了 `/opt/NetApp/xFiles/XCP`，请使用 `xcp activate` 命令激活许可证，然后继续执行数据迁移。

如果 `/opt/netapp/xFiles/XCP` 不可用，则在首次运行 `xcp activate` 命令时，系统会在 `/opt/netapp/xFiles/XCP` 中创建 XCP 主机配置目录。

由于未安装许可证，`xcp activate` 命令失败：

```
[root@scspr1980872003 linux]# ./xcp activate
(c) yyyy NetApp, Inc.
xcp: Host config file not found. Creating sample at
'/opt/NetApp/xFiles/xcp/xcp.ini'

xcp: ERROR: License file /opt/NetApp/xFiles/xcp/license not found.
Register for a license at https://xcp.netapp.com
```

4. 将此许可证复制到 `/opt/netapp/xFiles/XCP`：

```
[root@scspr1980872003 linux]# cp ~/license /opt/NetApp/xFiles/xcp/
```

5. 验证许可证文件是否已复制到 `/opt/netapp/xFiles/XCP`：


```
[root@scspr1980872003 ~]# ls -altr /opt/NetApp/xFiles/xcp/
total 44
drwxr-xr-x 3 root root    17 Oct  1 06:07 ..
-rw-r--r-- 1 root root   304 Oct  1 06:07 license
drwxr-xr-x 2 root root     6 Oct  1 10:16 xcpfalogs
drwxr-xr-x 2 root root    21 Oct  1 10:16 xcplogs
-rw-r--r-- 1 root root   110 Oct  5 00:48 xcp.ini
drwxr-xr-x 4 root root    83 Oct  5 00:48 .
[root@scspr1978802001 ~]#
```

6. 激活 XCP :

```
[root@scspr1980872003 linux]# ./xcp activate
XCP <version>; (c) yyyy NetApp, Inc.;
XCP activated
```

为非 root 用户安装 XCP

您可以使用以下操作步骤为非 root 用户安装 XCP 。

步骤

1. 以非 root 用户身份登录到 Linux 计算机，然后下载并安装许可证：

```
[user1@scspr2474004001 ~]$ ls -l
total 36640
-rwxr-xr-x 1 user1 user1    352 Sep 20 01:56 license
-rw-r--r-- 1 user1 user1 37512339 Sep 20 01:56
NETAPP_XCP_Nightly_dev.tgz
[user1@scspr2474004001 ~]$
```

2. 要提取此工具，请解压缩 XCP :

```
[user1@scspr2474004001 ~]$ tar -xvf NETAPP_XCP_Nightly_dev.tar
[user1@scspr2474004001 ~]$ cd xcp/linux/
[user1@scspr2474004001 linux]$ ls
xcp
[user1@scspr2474004001 linux]$
```

3. 验证先前版本的 XCP 是否在系统上提供了 `/home/user1/NetApp/xFiles/XCP` 路径。

如果 `/home/user1/NetApp/xFiles/XCP` 路径可用，请使用 `XCP activate` 命令激活许可证并继续执行数据迁移。

如果 `/home/user1/NetApp/xFiles/XCP` 不可用，则在首次运行 XCP activate 命令时，系统会在 `/home/user1/NetApp/xFiles/XCP` 中创建 XCP 主机配置目录。

由于未安装许可证，XCP activate 命令失败：

```
[user1@scspr2474004001 linux]$ /home/user1/xcp/linux/xcp activate
(c) yyyy NetApp, Inc.
xcp: Host config file not found. Creating sample at
'/home/user1/NetApp/xFiles/xcp/xcp.ini'

xcp: ERROR: License file /home/user1/NetApp/xFiles/xcp/license not
found.
Register for a license at https://xcp.netapp.com
[user1@scspr2474004001 linux]$
```

4. 将许可证复制到 `/home/user1/NetApp/xFiles/XCP` ：

```
[user1@scspr2474004001 linux]$ cp ~/license
/home/user1/NetApp/xFiles/xcp/
[user1@scspr2474004001 linux]$
```

5. 验证许可证文件是否已复制到 `/home/user1/NetApp/xFiles/XCP` ：

```
[user1@scspr2474004001 xcp]$ ls -ltr
total 8
drwxrwxr-x 2 user1 user1 21 Sep 20 02:04 xcplogs
-rw-rw-r-- 1 user1 user1 71 Sep 20 02:04 xcp.ini
-rwxr-xr-x 1 user1 user1 352 Sep 20 02:10 license
[user1@scspr2474004001 xcp]$
```

6. 激活 XCP ：

```
[user1@scspr2474004001 linux]$ ./xcp activate
(c) yyyy NetApp, Inc.

XCP activated

[user1@scspr2474004001 linux]$
```

安装 XCP SMB



没有升级选项；请重新安装 XCP 以替换任何现有版本。

• 系统要求 *

项目	要求
系统	64 位 Intel 或 AMD 服务器，至少 4 个核心和 32 GB RAM
操作系统和软件	Windows 2012 R2 或更高版本。有关支持的 Microsoft 操作系统版本，请参见 "互操作性表工具" 。必须在 XCP 主机上安装 Visual C++ 2017 可重新分发软件包。
特殊要求	源存储系统，XCP 主机和目标 ONTAP 系统必须属于同一 Active Directory 域
存储	XCP 二进制文件需要 20 MB 磁盘空间，而 C : \NetApp\XCP 目录中存储的日志需要至少 50 MB 磁盘空间
支持的协议版本	所有 SMB 协议版本
支持的浏览器（仅限文件分析）	请参见 "IMT" XCP文件分析所有受支持浏览器版本的列表。

XCP SMB Microsoft VC++ 可重新分发安装

按照以下步骤安装 vc++ 可重新分发的软件。

步骤

1. 单击 ["vc++ 2017 可重新分配"](#) 将可执行文件下载到默认下载文件夹。
2. 要开始安装，请双击安装程序。接受条款和条件并选择 * 安装 *。
3. 安装完成后，重新启动 Windows 客户端。

XCP SMB 初始设置操作步骤

按照以下步骤执行 XCP SMB 的初始设置。

步骤

1. 在 Windows 客户端上下载许可证和 XCP SMB 二进制文件 `NetApp_XCP_<version>.tgz`。
2. 提取 `NetApp_XCP_<version>.tgz` 文件。
3. 复制 `xcp.exe` 文件到 Windows C : 驱动器、此二进制文件可在中使用 `NETAPP_XCP_<version>\xcp\windows` 提取后 tgz 文件
4. 验证 C : \NetApp\XCP 路径是否可从先前版本的 XCP 在系统上使用。如果 C : \NetApp\XCP 可用，请使用 `xcp.exe activate` 命令激活 XCP，然后继续执行数据迁移。

如果 C : \NetApp\XCP 不可用，则在首次运行 `xcp.exe activate` 命令时，系统会创建 XCP 主机配置目录并将其记录在 C : \NetApp\XCP 中。`xcp.exe activate` 命令失败，并创建一条错误消息，要求提供新许可证。

```
C:\>xcp.exe activate
(c) yyyy NetApp, Inc.

License file C:\NetApp\XCP\license not found.
Register for a license at https://xcp.netapp.com
```

5. 将许可证复制到新创建的文件夹 c : \NetApp\XCP :

```
C:\>copy license c:\NetApp\XCP
1 file(s) copied.
```

6. 激活 XCP :

```
C:\>xcp.exe activate
XCP SMB; (c) yyyy NetApp, Inc.;

XCP activated

C:\>
```

安装 NFS 文件分析

安装或升级适用于 NFS 的文件分析。

关于此任务

有关NFS的系统要求、请参见 ["安装 XCP NFS"](#)。

。 `configure.sh` 此脚本会在Red Hat Enterprise Linux (RHEL)主机上安装XCP文件分析。在安装过程中、该脚本会在Linux主机上安装Postgrs数据库、Apache HTTPD服务器和其他所需的软件包。有关支持的特定RHEL版本的信息、请参见 ["IMT"](#)。您可以根据需要更改或更新到最新版本，并遵循安全准则。了解有关的更多信息 `configure.sh` 脚本、运行 `./configure.sh -h` 在命令行上。

开始之前

- 如果正在运行任何XCP操作、NetApp建议您在开始配置之前完成这些操作。
- 您的 Linux 计算机必须连接到 Yum 存储库服务器或 Internet 。
- 如果在Linux计算机上配置了防火墙、则必须更改防火墙设置以启用XCP服务使用的端口5030。

步骤

1. 安装或升级适用于 NFS 的文件分析。

安装文件分析

- a. 导航到 `xcp` 文件夹并运行 `./configure.sh` 脚本。

如果安装成功、则会显示以下消息：

```
You can now access XCP file analytics using
(<username>:<password>)
https://<ip_address>/xcp
```



您可以使用此用户名和密码登录到文件分析GUI。

升级文件分析

- a. 导航到 `xcp` 文件夹并运行 `./configure.sh -f`。
- b. 在提示符处、输入 `y` 清理和重新配置系统。

批准脚本后、它会清理现有配置并重新配置系统。

如果成功、则会显示以下消息：

```
You can now access XCP file analytics using
(<username>:<password>)
https://<ip_address>/xcp
```

2. 在支持的浏览器中启动文件分析：**`https://<ip address of Linux>/XCP`**。

请参见 ["安装 XCP NFS"](#) 有关支持的浏览器的信息。

安装适用于 **SMB** 的文件分析

安装或升级适用于 SMB 的文件分析。

关于此任务

有关 SMB 的系统要求，请参见 ["安装 XCP SMB"](#)。

开始之前

- 要使用 XCP SMB 服务，必须在 Linux 计算机上为 NFS 配置 XCP 文件分析。
- 在 Windows 计算机上开始配置 XCP 文件分析之前，请确保 XCP 服务正在 Linux 计算机上运行。

全新安装适用于 **SMB** 的文件分析

要对 SMB 执行文件分析全新安装，请完成以下步骤。

步骤

1. 复制 `xcp.exe` 文件到Windows C: 驱动器、此二进制文件可在内部使用 `/xcp/windows` 在您解压缩后 `tgz` 文件
2. 从下载 XCP 许可证文件 "[XCP 站点](#)".
3. 创建文件夹 C : \NetApp\XCP 并将 XCP 许可证复制到此位置。
4. 在命令提示符处使用以下命令激活 XCP 许可证: `xcp.exe activate`
5. 在 Windows 命令行界面命令提示符中, 运行 `XCP configure`。
6. 出现提示时, 提供配置 XCP 文件分析服务器的 Linux 计算机的 IP 地址。
7. 复制 `server.key` 和 `server.crt` 文件 `/opt/NetApp/xFiles/xcp/` (在已配置XCP文件分析的Linux框中)为 `C:\NetApp\XCP`。

(可选)如果您有CA证书、请将该证书放入 `C:\NetApp\XCP` 具有相同的名称和扩展名。

8. 转到Windows计算机并运行 `xcp listen`, 现在已配置SMB的XCP文件分析。保持窗口打开以持续运行服务。
9. 在支持的浏览器上启动文件分析: `https://<ip address of linux>/xcp`

请参见 "[安装 XCP SMB](#)" 有关支持的浏览器的信息。

10. 选择 ... OK 显示对话框时。



此时将打开一个新选项卡。如果浏览器上的弹出窗口被阻止、请启用该弹出窗口。

11. 接受URL的隐私策略。此时将显示以下消息: `SMB agent is ready to use. Please refresh the analytics page`
12. 通过返回到托管XCP文件分析GUI的原始选项卡并刷新页面、在"Agents"卡下显示SMB代理。

升级 **SMB** 文件分析

要升级适用于 SMB 的现有文件分析, 请完成以下步骤。

1. 在运行文件分析之前、请确认运行文件分析的Linux服务器也已升级、并且该服务正在运行。
2. 在 Windows 中, 通过在命令行上输入 `CTRL-C` 来停止现有 XCP 服务。
3. 替换 `xcp.exe` 使用最新的二进制文件。
4. 转到Windows计算机并运行 `xcp listen` 为SMB配置XCP文件分析。保持窗口打开以持续运行服务。
5. 在支持的浏览器上启动文件分析: `https://<ip address of linux>/xcp`

请参见 "[安装 XCP SMB](#)" 有关支持的浏览器的信息。

6. 显示对话框时选择*OK*。



此时将打开一个新选项卡。如果浏览器上的弹出窗口被阻止、请启用该弹出窗口。

7. 接受URL的隐私策略。此时将显示以下消息：SMB agent is ready to use. Please refresh the analytics page
8. 通过返回到托管XCP文件分析GUI的原始选项卡并刷新页面、在"Agents"卡下显示SMB代理。

配置 XCP

配置 XCP NFS 的 ini 文件

为 XCP 配置 ini 文件的步骤。



XCP SMB中不需要XCP INI文件。

为 root 用户配置此 ini 文件

您可以使用以下操作步骤为 XCP NFS root 用户配置 文件。

步骤

1. 使用 vi 编辑器在主机配置文件中添加 XCP 服务器的目录位置：



在修改 xcp.ini XCP 配置文件中的详细信息之前，应导出目录位置。目录位置（NFSv3）应可由 XCP Linux 主机挂载，但不一定要挂载。

```
[root@localhost ~]# vi /opt/NetApp/xFiles/xcp/xcp.ini
```

2. 验证目录的 XCP Linux 客户端主机配置文件条目是否已修改。

```
[root@localhost ~]# cat /opt/NetApp/xFiles/xcp/xcp.ini
# Sample xcp config
[xcp]
catalog = 10.61.82.210:/vol/xcpvol/
```

为非 root 用户配置此 ini 文件

作为非 root 用户，您无权挂载 NFS 文件系统。需要 root 用户先挂载目录卷，然后，作为运行 XCP 的非 root 用户，如果您对目录卷具有读 / 写权限，则可以使用 POSIX 连接器访问挂载的目录卷。挂载卷后，您可以将目录添加到路径：


```
(t/10.237.170.53_catalog_vol - This is the path where catalog volume is
mounted) as follows.
```

```
[user1@scspr2474004001 xcp]$ ls -ltr
total 8
drwxrwxr-x 2 user1 user1  21 Sep 20 02:04 xcplogs
-rw-rw-r-- 1 user1 user1  71 Sep 20 02:04 xcp.ini
-rwxr-xr-x 1 user1 user1 352 Sep 20 02:10 license
[user1@scspr2474004001 xcp]$ cat /home/user1/NetApp/xFiles/xcp/xcp.ini

Sample xcp config [xcp]
catalog = file:///t/10.237.170.53_catalog_vol
```

性能调整

对于 XCP NFS，使用 `show` 和 `scan` 命令规划迁移后，您可以迁移数据。



以非 root 用户身份执行数据迁移时，root 用户可以执行以下步骤。

为了获得最佳性能和可靠性，NetApp 建议在 XCP Linux 客户端主机上的 `/etc/sysctl.conf` 中设置以下 Linux 内核 TCP 性能参数。运行 `sysctl -p` 或 `reboot` 命令以提交更改：

```
net.core.rmem_default = 1342177
net.core.rmem_max = 16777216
net.core.rmem_max = 16777216
net.core.wmem_default = 1342177
net.core.wmem_max = 16777216
net.ipv4.tcp_rmem = 4096 1342177 16777216
net.ipv4.tcp_wmem = 4096 1342177 16777216
net.core.netdev_max_backlog = 300000
net.ipv4.tcp_fin_timeout = 10
```



对于非 root 用户，此设置必须由 root 用户执行。

环境变量

XCP NFS 系统的可选环境变量配置。



非 root 用户也可以使用以下变量。

环境变量 `Xcp_config_DIR` 会覆盖默认位置 `/opt/netapp/xFiles/XCP`。如果设置，则值应为操作系统文件系统路径，可能是挂载的 NFS 目录的路径。设置 `XCP_config_DIR` 变量后，将在自定义配置目录路径中创建一个与主机名同名的新目录，并将新日志存储在此位置。

```
[root@localhost ~]# export XCP_CONFIG_DIR ='/tmp/xcp_config_dir_path'
```

环境变量`Xcp_log_DIR`会覆盖将XCP日志存储在配置目录中的默认位置。如果设置，则值应为操作系统文件系统路径，可能是挂载的 NFS 目录的路径。设置`Xcp_log_DIR`变量后、将在自定义日志目录路径中创建一个与主机名同名的新目录、并将新日志存储在此位置。

```
[root@localhost ~]# export XCP_LOG_DIR='/tmp/xcp_log_dir_path'
```

环境变量`Xcp_catalog_path`会覆盖xcp.in中的设置如果设置，则此值应采用 XCP 路径格式 `server : export[: 子目录]`。

```
[root@localhost ~]# export XCP_CATALOG_PATH='10.61.82.210:/vol/xcpvol/'
```



对于非 root 用户，必须将导出路径中的 `XCP_catalog` 替换为 POSIX 路径。

配置 POSIX 连接器

现在，XCP NFS 支持使用 POSIX 连接器为数据迁移提供源路径和目标路径。

支持的功能

POSIX 连接器支持以下功能：

- 对于支持 `nanosecond atime`，`mtime` 和 `ctime` 的 POSIX 文件系统，`scan` 命令将获取完整值（秒和纳秒），然后 `copy` 命令将其设置
- 与使用 NFSv3 TCP 插槽的 XCP 相比，POSIX 连接器更安全。

路径语法

POSIX 连接器的路径语法为 `\file : //< Linux 上的挂载路径 >`。

设置 POSIX 连接器

要设置 POSIX 连接器，必须执行以下任务：

- 挂载源卷和目标卷
- 验证目标路径是否具有写入数据所需的权限

在以下示例中挂载目标和目录：

```
root@scspr2395903001 ~]# findmnt -t nfs4
TARGET SOURCE FSTYPE OPTIONS
/t/10.237.170.39_src_vol 10.237.170.39:/source_vol nfs4
rw,relatime,vers=4.0,rsize=65536,wsiz=65536,namlen=255,hard,proto=t
cp,timeo=600,retrans=2,sec=sys,clien
/t/10.237.170.53_dest_vol 10.237.170.53:/dest_vol nfs4
rw,relatime,vers=4.0,rsize=65536,wsiz=65536,namlen=255,hard,proto=t
cp,timeo=600,retrans=2,sec=sys,clien
/t/10.237.170.53_catalog_vol 10.237.170.53:/xcp_catalog nfs4
rw,relatime,vers=4.0,rsize=65536,wsiz=65536,namlen=255,hard,proto=t
cp,timeo=600,retrans=2,sec=sys,clien
[root@scspr2395903001 ~]#
```

POSIX 连接器使用 POSIX 语法 `file : //` 访问源卷和目标卷。在以上示例中，源路径为 `\file : //t/10.237.170.39_src_vol`，目标路径为 `file : // /t/10.237.170.53_dest_vol`。

您可以通过为 XCP 用户创建 Linux 组来管理非 root 用户共享的 XCP 目录的示例配置。对于非 root 用户，Linux 组用户需要以下权限才能执行迁移。

在以下示例输出中，`demo` 是非 root 用户，而 `/mnt/xcp-catalog` 是目录卷的挂载路径：

```
sudo groupadd -g 7711 xcp_users
sudo usermod -G xcp_users -a demo
sudo chown -R :xcp_users /mnt/xcp-catalog
sudo chmod -R g+w /mnt/xcp-catalog
```

XCP 目录不会存储数据，但会存储扫描和复制文件名，目录名以及其他元数据。因此，建议您为允许的用户配置目录文件系统权限，使其能够保护存储的元数据。

所有权（UID 和 GID）

默认情况下，当您设置为常规用户时，对 POSIX 或 NFS3 目标执行 `copy` 命令时，不会尝试设置所有权（用户 ID（UID）和组 ID（GID））。所有权设置通常由管理员执行。当用户 A 从用户 B 复制文件时，用户 A 希望拥有目标。但是，如果 root 用户复制文件，则不会出现这种情况。当 root 用户复制这些文件时，`chown` 选项会更改此行为，以便带有 `-chown` 的非 root `copy` 命令尝试设置 UID 和 GID。

增加打开文件描述符的最大数量

为了获得最佳性能和可靠性，您可以增加所有节点上 XCP 用户的最大打开文件描述符数。

步骤

1. 使用以下命令打开文件：`vi /etc/security/limits.conf`
2. 将以下行添加到文件中：`<用户名> - nodfile 999999`

◦ 示例 *

```
root - nofile 999999
```

请参见 ["Red Hat 解决方案"](#) 有关详细信息 ...

配置 HDFS 连接器

对于 XCP NFS，Hadoop 分布式文件系统（HDFS）连接器（HDFS：//）使 XCP 能够访问不同供应商提供的任何 HDFS 文件系统。

支持的功能

HDFS 连接器支持从 HDFS 到 NFS 的 `copy` 命令操作。

路径语法

HDFS 连接器的路径语法为 `HDFS : //[user@host : port]/full-path`。



如果未指定用户、主机和端口，则 XCP 将调用 `hdfsConnect`，并将主机设置为 `default`，而将端口设置为 `0`。

设置 HDFS 连接器

要运行 HDFS `copy` 命令，您必须在 Linux 系统上设置 HDFS 客户端，并根据 Hadoop 供应商，按照 Internet 上提供的设置配置进行操作。例如，您可以使用 `https://docs.datafabric.hpe.com/60/AdvancedInstallation/SettingUptheClient-redhat.html` 为 MapR 集群设置客户端。

完成 HDFS 客户端设置后，必须在客户端上完成配置。要在 XCP 命令中使用 HDFS 路径，必须具有以下环境变量：

- `NHDFS_LIBHDFS_path`
- `NHDFS_libjvm_path`

在以下示例中，这些设置适用于 CentOS 上的 MapR 和 `java-1.8.0-OpenJDK-devel`：

```
export JAVA_HOME=$(dirname $(dirname $(readlink $(readlink $(which javac))))))
export NHDFS_LIBJVM_PATH=`find $JAVA_HOME -name "libjvm.so"` export
NHDFS_LIBHDFS_PATH=/opt/mapr/lib/libMapRClient.so
```

```
[demo@mapr0 ~]$ hadoop fs -ls Found 3 items
drwxr-xr-x - demo mapr 0 2021-01-14 00:02 d1
drwxr-xr-x - demo mapr 0 2021-01-14 00:02 d2
drwxr-xr-x - demo mapr 0 2021-01-14 00:02 d3
```

配置多节点横向扩展

对于 XCP NFS，您可以通过使用一个 `copy`（或 `scan -MD5`）命令在多个 Linux 系统或集群节点上运行 `workre` 来克服单个节点的性能限制。

支持的功能

在单个系统的性能不足的任何环境中，多节点横向扩展都很有用，例如在以下情形中：

- 单个节点需要数月才能复制数 PB 的数据
- 如果与云对象存储的高延迟连接会减慢单个节点的速度
- 在运行大量 I/O 操作的大型 HDFS 集群场中

路径语法

多节点横向扩展的路径语法为 ``-nodes worker1 , worker2 , worker3``。

设置多节点横向扩展

请考虑使用四台 Linux 主机进行设置，这些主机具有相似的 CPU 和 RAM 配置。您可以使用所有四个主机进行迁移，因为 XCP 可以在所有主机节点之间协调复制操作。要在横向扩展环境中使用这些节点，您必须将四个节点中的一个节点标识为主节点，而将其他节点标识为辅助节点。例如，对于 Linux 四节点设置，将节点命名为 "master"，"worker1"，"worker2" 和 "worker3"，然后在主节点上设置配置：

1. 将 XCP 复制到主目录中。
2. 安装并激活 XCP 许可证。
3. 修改 `xcp.ini` 文件并添加目录路径。
4. 将主节点上的无密码安全 Shell（SSH）设置为辅助节点：

- a. 在主节点上生成密钥：

```
ssh-keygen -b 2048 -t rsa -f /root/.ssh/id_rsa -q -N '
```

- b. 将密钥复制到所有工作节点：

```
ssh-copy-id -i /root/.ssh/id_rsa.pub root@worker1
```

XCP 主节点使用 SSH 在其他节点上运行工作人员。您必须对工作节点进行配置，以便为在主节点上运行 XCP 的用户启用无密码 SSH 访问。例如，要使用户能够在主节点上进行演示，以使用节点 "worker1" 作为 XCP 工作节点，您必须将 XCP 二进制文件从主节点复制到主目录中的所有工作节点。

最大启动数

同时启动多个 XCP 工作节点时，为了避免出现错误，您应增加每个工作节点上的 `sshd MaxStartups` 参数，如以下示例所示：

```
echo "MaxStartups 100" | sudo tee -a /etc/ssh/sshd_config
sudo systemctl restart sshd
```

nodes.ini"文件

当 XCP 在集群节点上运行辅助进程时，此辅助进程会从主节点上的主 XCP 进程继承环境变量。要自定义特定节点环境，您必须仅在主节点上的配置目录中的 `nodes.ini` 文件中设置变量（工作节点没有配置目录或目录）。例如，对于其 `libjvm.so` 位于与主节点不同位置的 Ubuntu 服务器 Mars，例如 Wave（即 CentOS），它需要一个配置目录，以允许使用这些服务器的工作人员使用 HDFS 连接器。此设置如以下示例所示：

```
[schay@wave ~]$ cat /opt/NetApp/xFiles/xcp/nodes.ini [mars]
NHDFS_LIBJVM_PATH=/usr/lib/jvm/java-8-openjdk-amd64/jre/lib/
amd64/server/libjvm.so
```

如果使用具有 POSIX 和 HDFS 文件路径的多会话，则必须在主节点和所有工作节点上挂载文件系统以及源和目标导出的文件系统。

当 XCP 在工作节点上运行时，该工作节点没有本地配置（无许可证，日志文件或目录）。系统主目录中仅需要 XCP 二进制文件。例如，要运行 `copy` 命令，主节点和所有工作节点都需要访问源和目标。对于 XCP 副本 `-nodes linux1, linux2 hdfs: //user/demo/test \file: //mnt/ontap`，`linux1` 和 `linux2` 主机必须配置 HDFS 客户端软件，并在 `/mnt/ontap` 上挂载 NFS 导出，如前所述，还必须在主目录中复制 XCP 二进制文件。

将 POSIX 和 HDFS 连接器、多节点横向扩展和安全功能相结合

您可以结合使用 POSIX 和 HDFS 连接器，多节点横向扩展和安全功能。例如，以下 `copy` 和 `verify` 命令将 POSIX 和 HDFS 连接器与安全性和横向扩展功能结合在一起：

- `copy` 命令示例：

```
./xcp copy hdfs:///user/demo/d1 file:///mnt/nfs-server0/d3
./xcp copy -match "'USER1 in name'" file:///mnt/nfs-server0/d3
hdfs:///user/demo/d1
./xcp copy -node worker1,worker2,worker3 hdfs:///user/demo/d1
file:///mnt/nfs-server0/d3
```

- `verify` 命令示例：

```
./xcp verify hdfs:///user/demo/d2 file:///mnt/nfs-server0/d3
```

配置 S3 连接器

从 XCP 1.1.2 开始，Simple Storage Service (S3) Connector 可以将数据从 Hadoop 分布式文件系统 (HDFS) 文件系统迁移到 S3 对象存储，从而扩大了 XCP 数据迁移的范围。

支持的迁移用例

S3 连接器支持以下迁移用例：

- 从 HDFS 迁移到 NetApp StorageGRID
- 从 HDFS 迁移到 Amazon S3

- 从HDFS迁移到NetApp ONTAP S3



目前、MapR仅适用于HDFS并受其支持。

支持的功能

支持 `scan`, `copy`, `verify`, `resume` 和 `delete` 命令可用于S3连接器。

不支持的功能

支持 `sync` 命令不适用于S3连接器。

路径语法

S3连接器的路径语法为 `s3://<bucket in S3>`。

- 您可以使用为XCP命令提供特定的S3配置文件 `-s3.profile` 选项
- 您可以使用 `s3.endpoint` 用于修改端点值以与S3通信的选项



StorageGRID和ONTAP S3必须使用端点。

设置S3连接器

步骤

1. 要使用S3连接器运行XCP命令、请按照相应平台的联机文档在S3中创建一个分段：
 - ["ONTAP S3对象存储管理"](#)
 - ["StorageGRID：使用租户帐户概述"](#)



在继续操作之前、您必须拥有 `access key`, `secret key`、证书颁发机构(CA)证书包、和 `endpoint url` 信息。在启动操作之前、XCP会使用这些参数识别并连接到S3存储分段。

2. 安装Amazon Web Services (AWS) CLI软件包并运行AWS CLI命令为S3帐户配置密钥和安全套接字层(SSL)证书：
 - 请参见 ["安装或更新最新版本的AWS命令行界面"](#) 安装AWS软件包。
 - 请参见 ["AWS CLI命令参考"](#) 有关详细信息 ...
3. 使用 `aws configure` 命令以配置凭据文件。默认情况下、文件的位置为 `/root/.aws/credentials`。凭据文件应指定访问密钥和机密访问密钥。
4. 使用 `aws configure set` 命令以指定CA证书包、该证书包是带有的文件 `.pem` 验证SSL证书时使用的扩展。默认情况下、文件的位置为 `/root/.aws/config`。
 - 示例： *

```

[root@client1 ~]# aws configure
AWS Access Key ID [None]: <access_key>
AWS Secret Access Key [None]: <secret_key>
Default region name [None]:
Default output format [None]:
[root@client1 ~]# cat /root/.aws/credentials
[default]
aws_access_key_id = <access_key>
aws_secret_access_key = <secret_key>
[root@client1 ~]#
[root@client1 ~]# aws configure set default.ca_bundle
/u/xxxx/s3/ca/aws_cacert.pem
[root@client1 ~]# cat /root/.aws/config
[default]
ca_bundle = /u/xxxx/s3/ca/aws_cacert.pem

```

5. 完成所需的设置配置后、确认AWS命令行界面命令可以从Linux客户端访问S3存储分段、然后再运行XCP命令:

```
aws s3 ls --endpoint-url <endpoint_url> s3://bucket-name/
```

```
aws s3 ls --profile <profile> --endpoint-url <endpoint_url> s3://bucket-name
```

◦ 示例: *

```

[root@client1 linux]# aws s3 ls --profile <profile> --endpoint
<endpoint_url> s3://<bucket-name>
                PRE 1G/
                PRE aws_files/
                PRE copied_folders/
                PRE d1/
                PRE d2/
                PRE giant_size_dirs/
                PRE medium_size_dirs/
                PRE small_size_dirs/

[root@client1 l

```


规划数据迁移

规划数据迁移

您可以使用命令行界面或文件分析图形用户界面规划迁移。

使用以下命令规划迁移：

- -show
- 扫描

使用文件分析以可视化方式显示导出和共享的统计信息。

规划 NFS 数据迁移

规划 NFS 数据迁移。

显示

。 show 命令用于查询一个或多个存储服务器的RPC服务和NFS导出。命令将列出可用服务和导出，并列每个导出的已用容量和可用容量，然后列出每个导出的根属性。

- 示例： *
- XCP show < NFS 文件服务器 IP/FQDN>
- XCP 显示 nfs_server01.netapp.com

有关详细信息，请运行 XCP 帮助显示。

扫描

。 scan 命令会以递归方式扫描源NFS3导出的整个路径、并在扫描结束时输出文件结构的统计信息。NetApp 建议在扫描操作期间将源 NFS 导出挂载置于只读模式。



如果文件或目录名称包含非UTF-8字符、则这些字符将转换为UTF-8格式、并在运行时显示 xcp-scan 命令：根据从源编码转换为UTF-8的情况、字符可能无法按预期显示。

- 示例： *
- xcp scan NFS [server:/export path | file://]
- XCP scan nfs_server01.netapp.com:/export1
- XCP 扫描 \file : //mnt/nfs-source

有关详细信息，请运行 XCP 帮助扫描。

也可以使用文件分析以图形方式查看结果。

规划 SMB 数据迁移

规划 SMB 数据迁移。

-show

show 命令可显示服务器上所有可用的 SMB 共享以及可用的权限和空间。示例

- XCP show \\<SMB 文件服务器 IP/FQDN>
- XCP 显示 smb_server01.netapp.com

有关详细信息，请运行 XCP 帮助显示。

扫描

scan 命令可递归扫描整个 SMB 共享，并在扫描结束时列出所有文件。



在扫描操作期间，您可以将`-preserve-atime`标志与 scan 命令结合使用，以保留源的访问时间。

- 示例：*
- XCP 扫描 \\SMB server\share1
- XCP scan smb_server01.netapp.com:/share1

有关详细信息，请运行 XCP 帮助扫描。

也可以使用文件分析以图形方式查看结果。

规划HDFS数据迁移

规划HDFS数据迁移。

扫描

。 scan 命令以递归方式扫描整个源路径、并在扫描结束时输出文件结构的统计信息。

- xcp scan HDFS [hdfs://<hdfs mounted path>]
- XCP 扫描 HDFS : //demo/user1
- xcp scan s3://my-bucket
- xcp scan -s3.profile <s3 profile name> -s3.endpoint <endpoint-url> s3://my-bucket

有关详细信息，请运行 XCP 帮助扫描。

使用文件分析进行规划

规划数据迁移

使用文件分析规划数据迁移。



XCP 是一个 CLI，而文件分析则具有一个图形用户界面。

• 概述 *

XCP 文件分析使用 XCP 扫描 API 从 NFS 或 SMB 主机收集数据。然后，此数据将显示在 XCP 文件分析图形用户界面上。XCP 文件分析涉及三个主要组件：

- XCP 服务
- 文件分析数据库
- 文件分析 GUI，用于管理和查看数据

XCP 文件分析组件的部署方法取决于所需的解决方案：

- 为 NFS 文件系统部署 XCP 文件分析解决方案：
 - 您可以在同一 Linux 主机中部署文件分析图形用户界面，数据库和 XCP 服务。
- 为 SMB 文件系统部署 XCP 文件分析解决方案：您必须在 Linux 主机中部署文件分析 GUI 和数据库，并在 Windows 主机上部署 XCP 服务。

访问文件分析

文件分析提供扫描结果的图形视图。

登录到文件分析GUI

XCP文件分析GUI提供了一个信息板、其中包含用于可视化文件分析的图形。在 Linux 计算机上配置 XCP 时，XCP 文件分析图形用户界面将处于启用状态。



要检查访问文件分析所支持的浏览器，请参见 "NetApp IMT"。

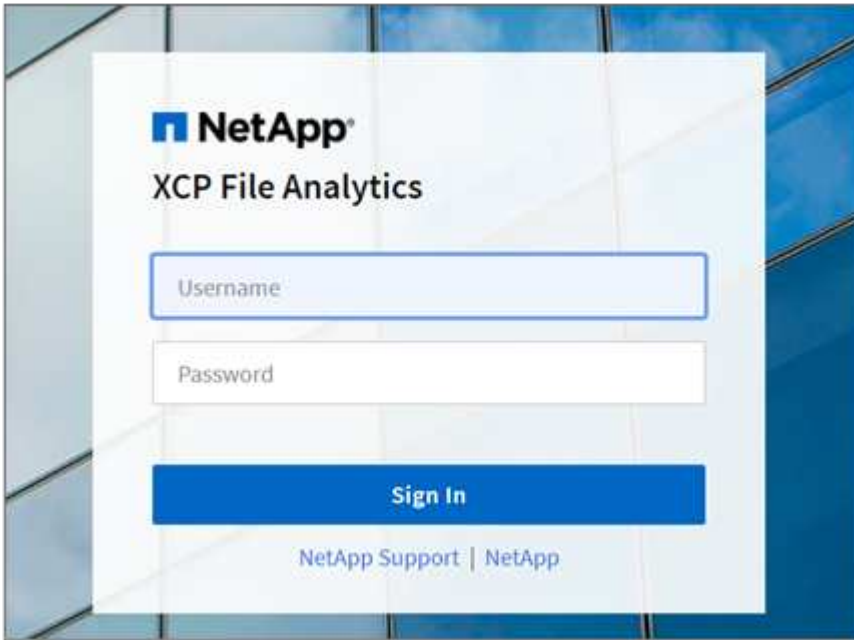
步骤

1. 使用链接 `https://<IP address of Linux machine>/XCP` 访问文件分析图形用户界面。出现提示时，接受安全证书：
 - a. 选择隐私声明下方的*高级*。
 - b. 选择*继续 <IP address of linux machine>*链接。
2. 登录到文件分析图形用户界面。

可以通过两种方式登录到文件分析图形用户界面：

使用用户凭据登录

- a. 使用安装文件分析时获得的用户凭据登录到图形用户界面。



- b. (可选)将密码更改为您自己的密码。

如果要将安装期间获得的密码更改为您自己的密码，请选择用户图标并选择*Change password*。

新密码长度必须至少为八个字符、并且至少包含一个数字、一个大写字母、一个小写字母和一个特殊字符(! @#\$%^和*-_)。



更改密码后、系统会自动从GUI中注销、您必须使用创建的新密码重新登录。

配置和启用SSO功能

您可以使用此登录功能在特定计算机上设置XCP文件分析、并在企业范围内共享Web UI URL、从而允许用户使用其单点登录(Single Sign On、SSO)凭据登录到UI。



SSO登录是可选的、可以永久配置和启用。要设置基于安全断言标记语言(SAML)的SSO登录、请参见 [配置SSO凭据](#)。

3. 登录后、您可以看到NFS代理；绿色勾号显示Linux系统和XCP版本的最低系统配置。
4. 如果您已配置 SMB 代理，则可以看到在同一代理卡中添加了 SMB 代理。

配置SSO凭据

SSO登录功能在使用SAML的XCP文件分析中实施、并受Active Directory联合身份验证服务(Active Directory Federation Services、ADFS)身份提供程序支持。SAML会将身份验证任务卸载到企业的第三方身份提供程序(IdP)、该程序可利用任意数量的MFA方法(多因素身份验证)。

步骤

1. 向企业身份提供程序注册XCP文件分析应用程序。

文件分析现在以服务提供商的身份运行、因此必须向企业身份提供商注册。通常、企业中有一个团队负责处理此SSO集成过程。第一步是找到相关团队并联系他们、并与他们共享文件分析应用程序元数据详细信息。

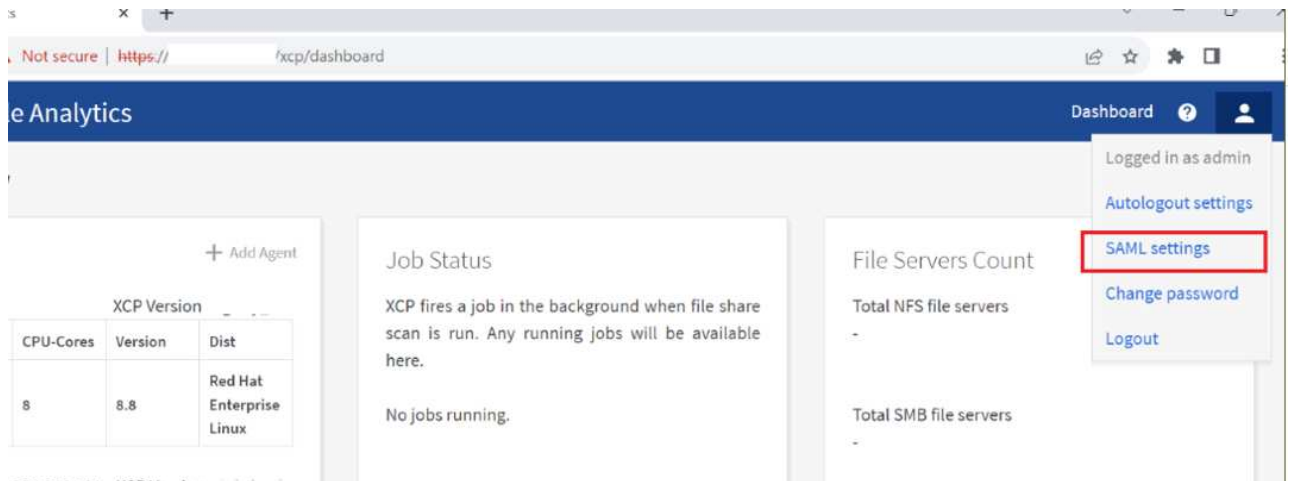
以下是向身份提供程序注册时必须共享的必填详细信息：

- 服务提供商实体ID: `https://<IP address of linux machine>/xcp`
- 服务提供商断言使用者服务(ACS) URL: `https://<IP address of linux machine>:5030/api/xcp/SAML/sp`

您也可以登录到文件分析UI来验证这些详细信息：

- 按照中所述的步骤登录到GUI [登录到文件分析GUI](#)。
- 选择页面右上角的*用户*图标、然后选择* SAML设置*。

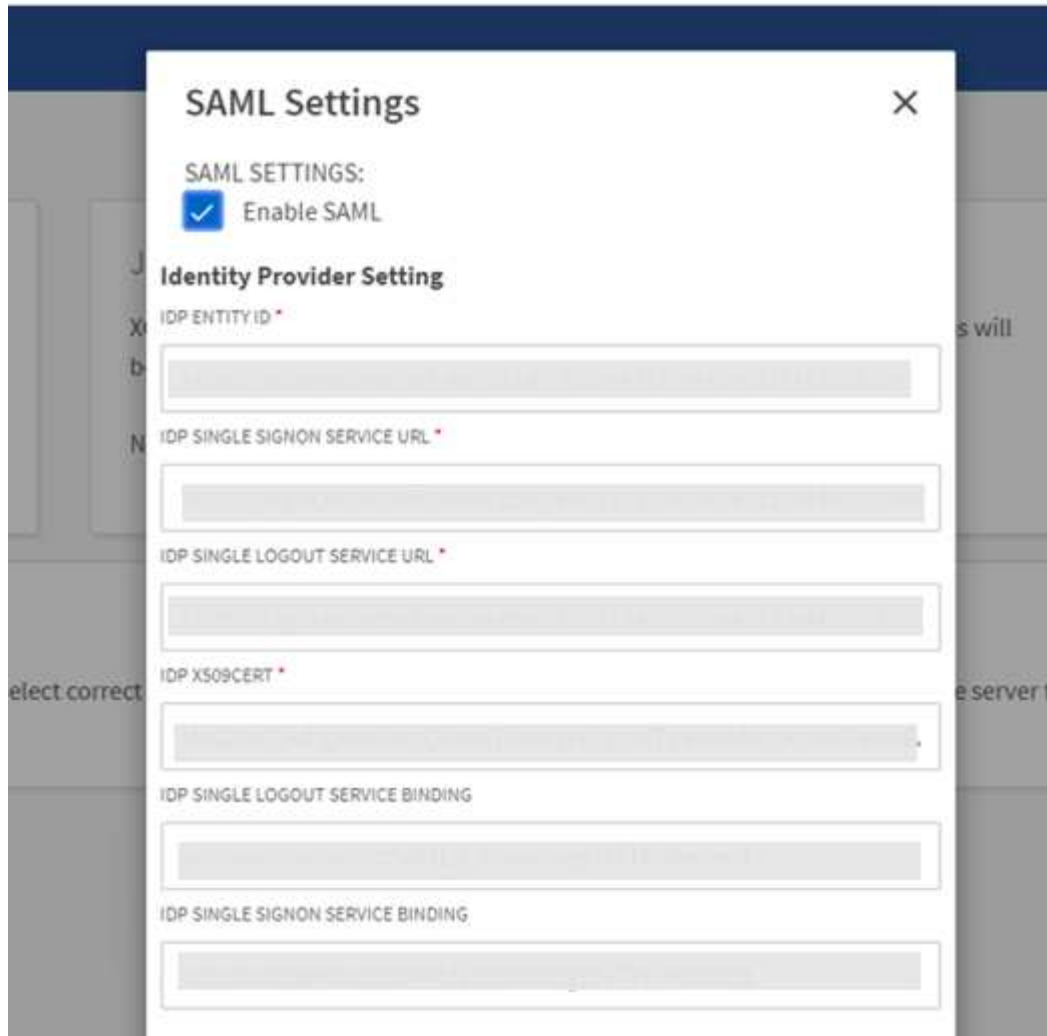
在显示的下拉菜单中选中*服务提供商设置*。



注册后、您将收到企业的IdP端点详细信息。您需要向文件分析UI提供此IdP端点元数据。

2. 提供IdP详细信息：

- 转至 * 信息板 *。选择页面右上角的*用户*图标、然后选择* SAML设置*。
- 输入注册后获取的IdP详细信息。
 - 示例 *



- a. 选中*启用SAML *复选框以永久启用基于SAML的SSO。
- b. 选择 * 保存 *。
- c. 注销文件分析并重新登录。

系统会将您重定向到企业SSO页面。

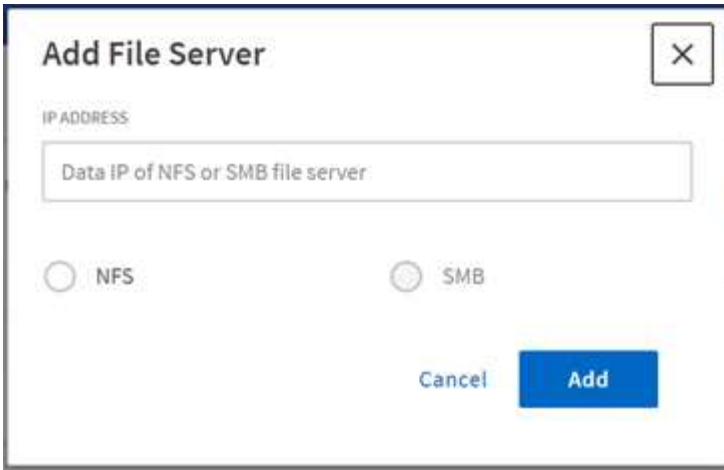
添加文件服务器

您可以在 XCP 文件分析 GUI 中配置 NFS 和 SMB 导出的文件系统。

这样，XCP 文件分析便可扫描和分析文件系统上的数据。按照以下步骤添加 NFS 或 SMB 文件服务器。

步骤

1. 要添加文件服务器，请选择 * 添加文件服务器 *。



添加文件服务器 IP 地址，选择 NFS 或 SMB 选项，然后单击 * 添加 *。



如果 SMB 代理在图形用户界面中不可见，您将无法添加 SMB 服务器。

添加文件服务器后，XCP 将显示：

- 可用文件共享总数
- 包含分析数据的文件共享（初始计数为 "0"，在您成功运行扫描时会更新）
- 总空间利用率—所有导出已利用的空间之和
- 文件共享和空间利用率数据是直接来自 NFS/SMB 服务器获取的实时数据。收集和处理数据需要几秒钟的时间。



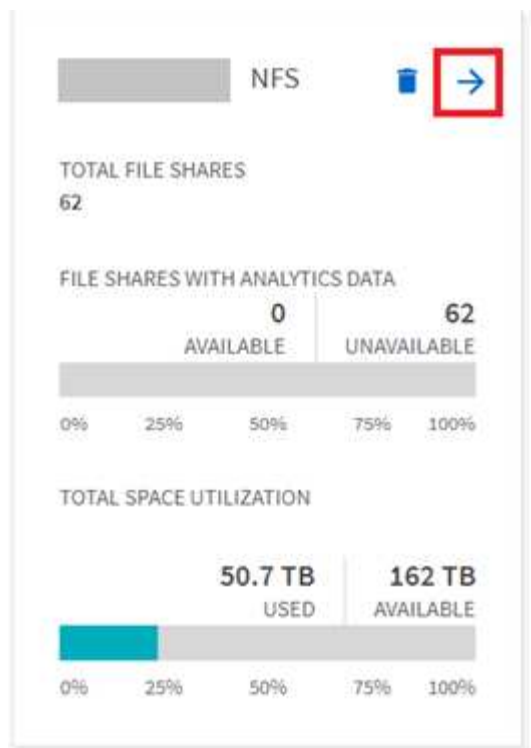
文件分析中的可用空间与已用空间是根据通过 NFS 提供的每个导出文件系统计算得出的。例如，如果卷包含 qtree，并且导出是通过 qtree 创建的，则总空间为卷大小和 qtree 大小的累积空间。

运行扫描

将 NFS/SMB 文件系统添加到 XCP 文件分析图形用户界面后，您可以启动文件系统扫描来分析和表示数据。

步骤

1. 选择添加的文件服务器卡上的箭头以查看文件服务器上的文件共享。

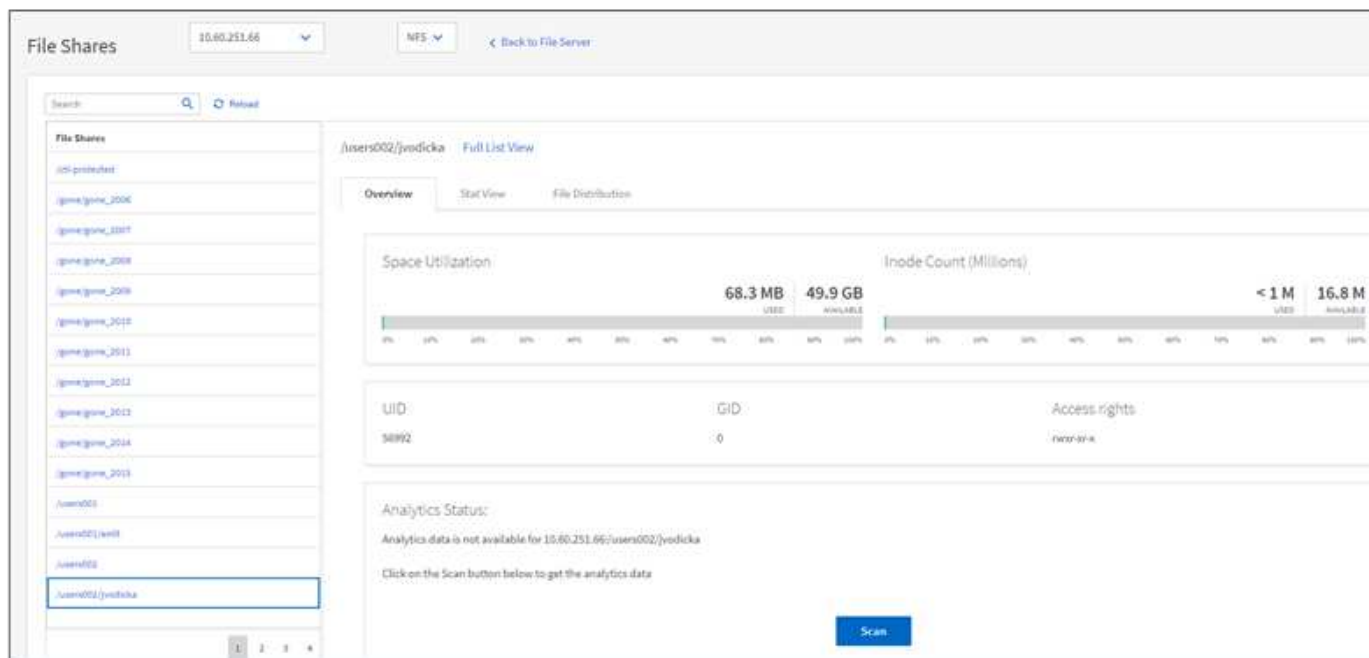


2. 从文件共享列表中，选择要扫描的文件共享的名称。

3. 选择 * 扫描 * 以启动扫描。

XCP 将显示扫描的进度条。

4. 扫描完成后，系统将启用 * 统计视图 * 和 * 文件分发 * 选项卡，以允许您查看图形。

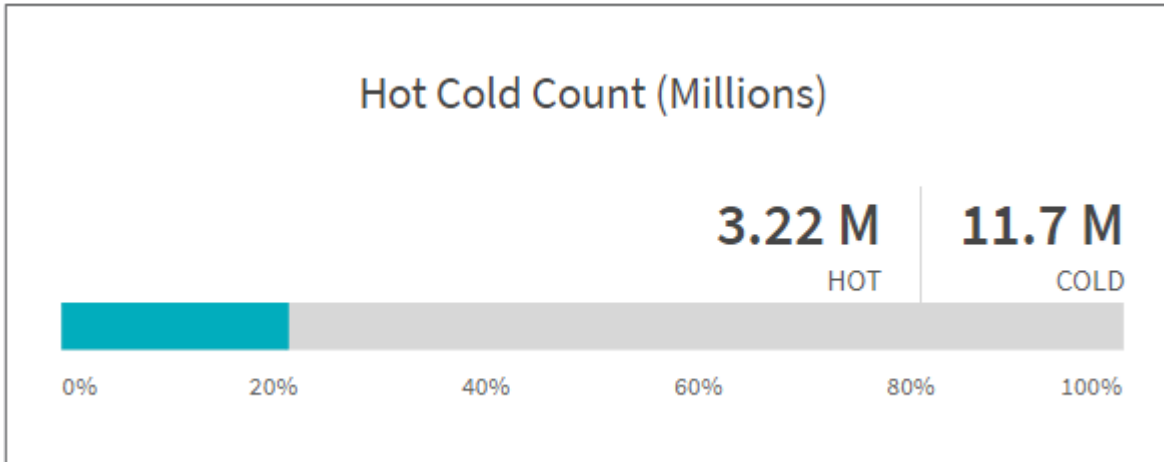


了解图形

文件分析 GUI 信息板显示多个图形，用于直观地显示文件分析。

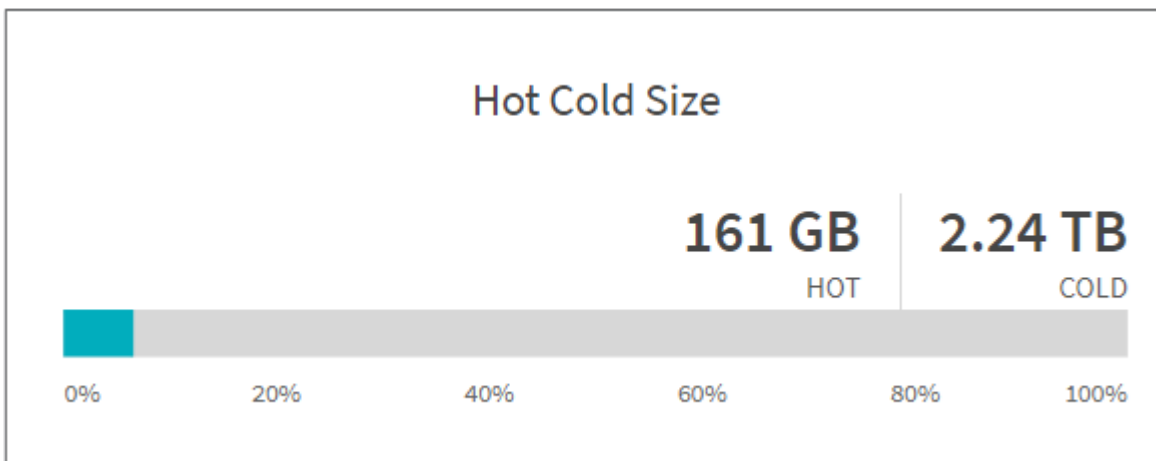
热冷计数图

XCP 文件分析将 90 天内未访问的文件归类为冷数据。过去 90 天访问的文件是热数据。定义热数据和冷数据的标准仅基于访问时间。



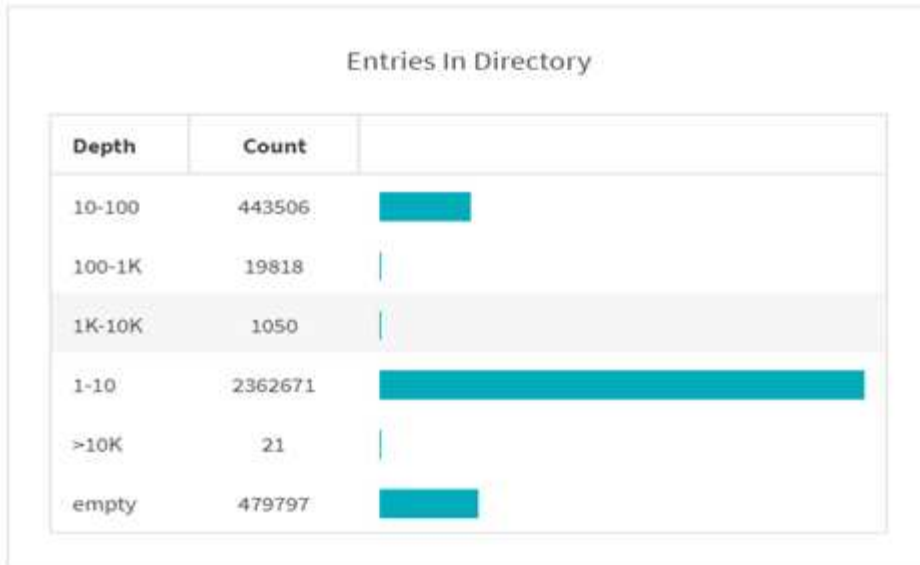
"热冷计数"图显示了 XCP NFS 中热或冷的索引节点数（以百万为单位）。在 XCP SMB 中，此图表示热文件或冷文件的数量。彩色条表示热数据，并显示在 90 天内访问的文件的百分比。

冷热大小图



冷热大小图显示冷热文件的百分比以及每个类别中文件的总大小。彩色条表示热数据，非彩色部分表示冷数据。定义热数据和冷数据的标准仅基于访问时间。

目录图形中的条目



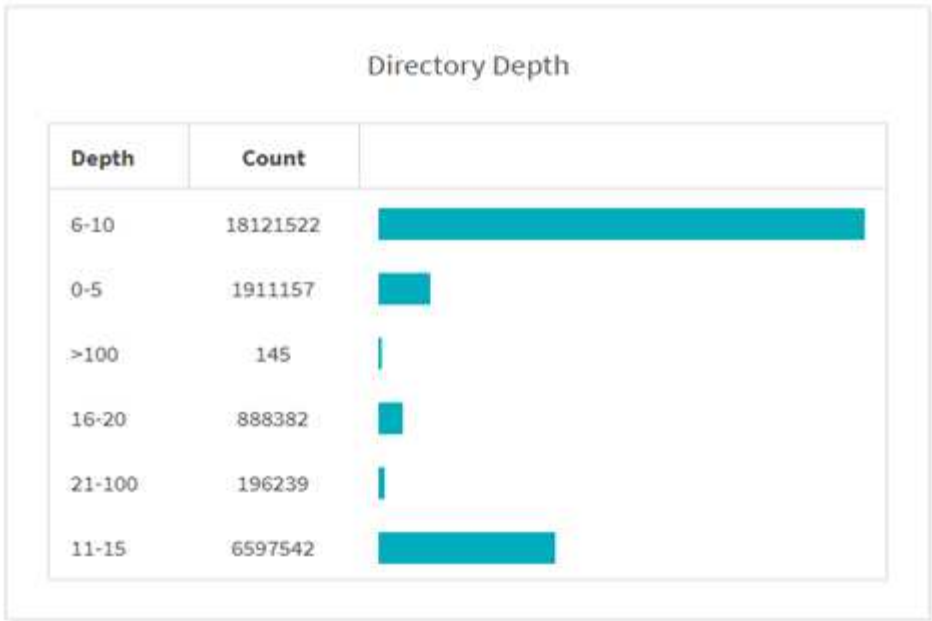
目录图形中的条目显示目录中的条目数。depth 列包含不同的目录大小，Count 列指示每个目录深度中的条目数。

按大小分布的文件图



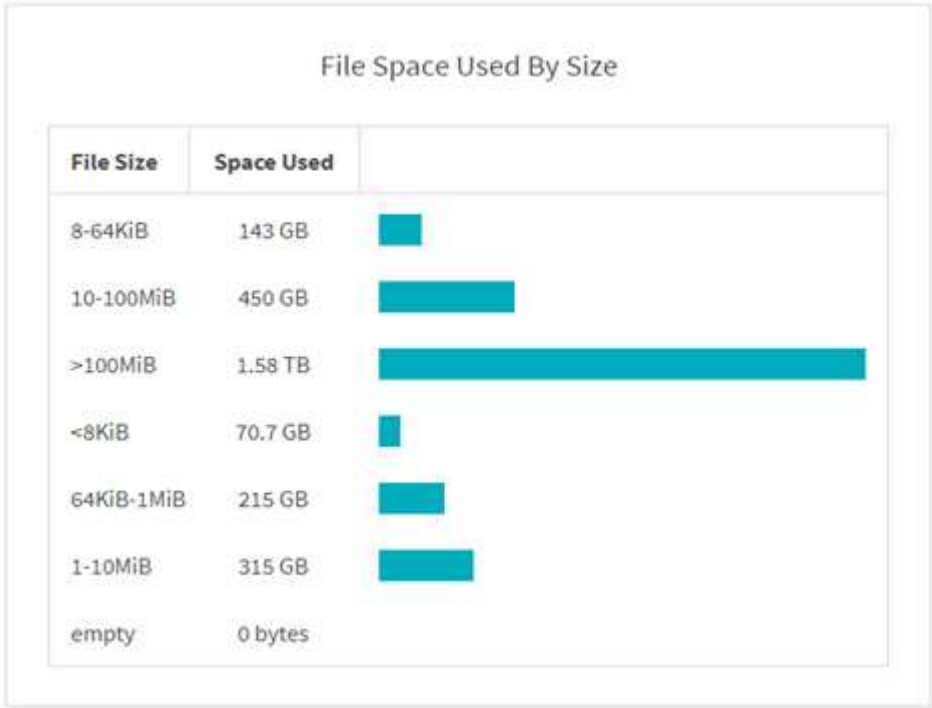
"按大小分布的文件"图显示给定文件大小下的文件数。"文件大小"列包含文件大小的类别，"计数"列指示文件数的分布情况。

目录深度图



目录深度图表示目录数在不同目录深度范围内的分布情况。depth 列包含各种目录深度， Count 列包含文件共享中每个目录深度的计数。






大小图形使用的文件空间



大小所用文件空间图显示了不同文件大小范围内的文件数。文件大小列包含不同的文件大小范围，已用空间列指示每个文件大小范围使用的空间。

用户占用的空间图形

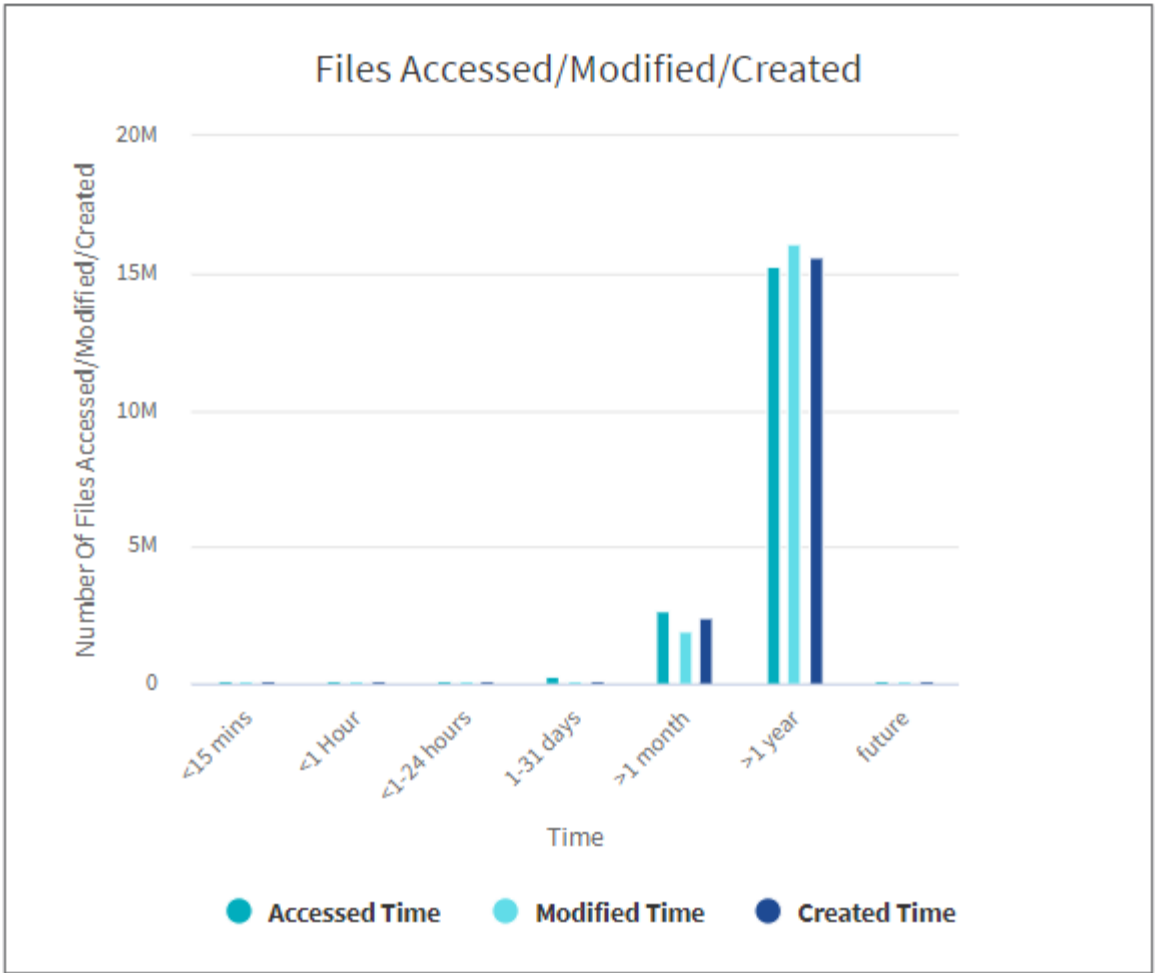
Space Occupied By Users

Username	Space Used	
4568	47.8 GB	
14952	67.1 GB	
19592	48.2 GB	
48973	54.5 GB	
50900	47.3 GB	

1 2

用户占用的空间图显示用户使用的空间。Username 列包含用户名（无法检索用户名时为 UID），Space Used 列指示每个用户名使用的空间。

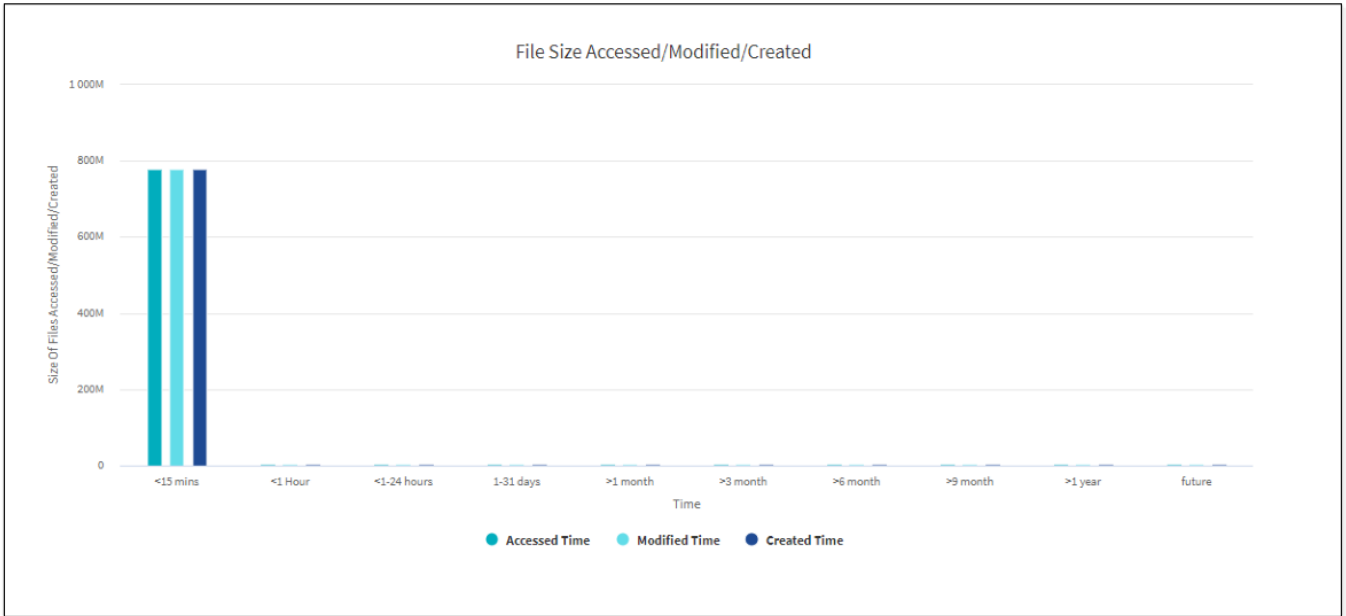
已访问 / 修改 / 创建的文件图形



文件已访问/已修改/已创建图形显示随时间变化的文件计数。X轴表示所做更改的时间段、Y轴表示所更改的文件数。

i 要获取 SMB 扫描中的访问时间（atime）图，请选中在运行扫描之前保留 atime 复选框。

访问/修改/创建的文件大小图形

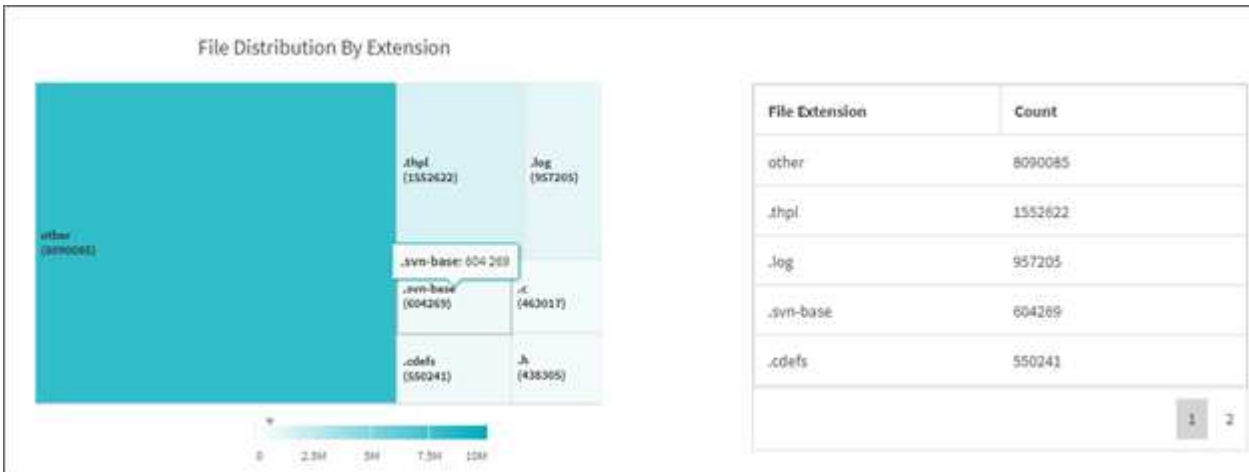


访问/修改/创建的文件大小图形显示随时间变化的文件大小。X轴表示所做更改的时间段、Y轴表示所更改文件的大小。



要获取 SMB 扫描中的访问时间（atime）图，请选中在运行扫描之前保留 atime 复选框。

按扩展名统计图的文件分布



按扩展名分布的文件图表示文件共享中不同文件扩展名的计数。表示扩展名的分区大小取决于每个扩展名包含的文件数。

此外、对于SMB共享、您可以通过在运行扫描之前选中备用数据流复选框来获取每个文件扩展名的备用数据流文件数。

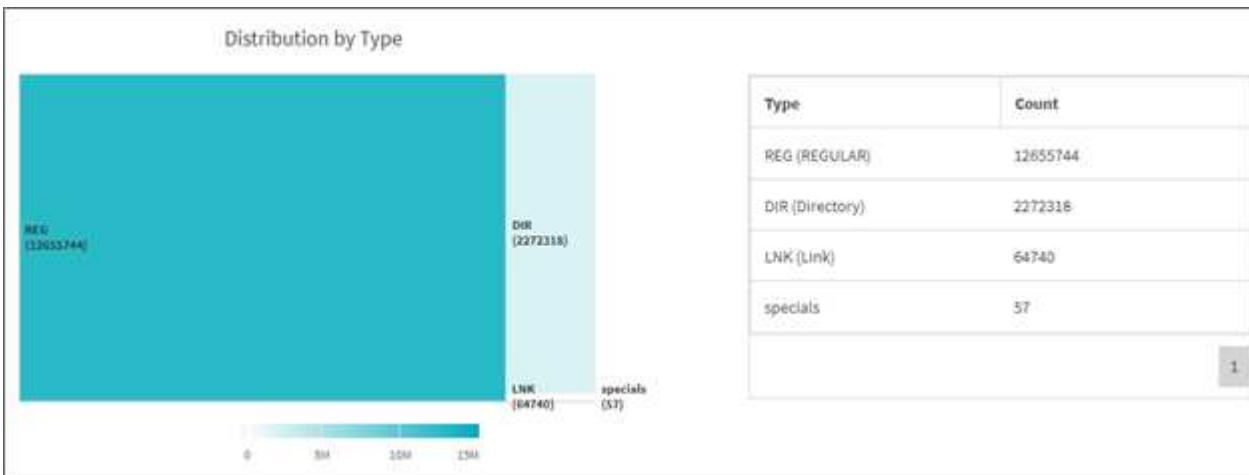


文件大小分布(按扩展名统计图)



"按扩展名分布的文件大小"图表示文件共享中不同文件扩展名的累计大小。表示扩展名的分区大小取决于每个扩展名的文件大小。

按类型分布的文件图形



按类型分布图表示以下类型的文件数：

- reg：常规文件
- LNK：包含链接的文件
- 特殊功能：包含设备文件和字符文件的文件。
- dir：包含目录的文件

- 接合：仅适用于 SMB

此外、对于SMB共享、您可以通过在运行扫描之前选中备用数据流对应的复选框来获取不同类型的备用数据流文件的数量。



筛选器

XCP 提供了可在 XCP 操作中使用的筛选器选项。

XCP 会对 NFS 和 SMB 的 `匹配` 和 `排除` 选项使用筛选器。

对于 NFS ，请运行 XCP 帮助信息 并参阅筛选器部分，了解如何使用 `匹配` 和 ` - 排除` 筛选器。

对于 SMB ，请运行 XCP help -match 和 XCP help -exclude 以获取有关 match 和 exclude 筛选器的更多详细信息。

如果要在 XCP 命令中使用筛选器，请运行 XCP help <command> 以查看它们是否为受支持的选项。

NFS 和 SMB 的日志记录（可选）

为 XCP NFS 和 SMB 记录日志。

XCP 支持使用 xcpLogConfig.json JSON 配置文件配置多个可选功能。要仅启用特定功能，请手动创建 xcpLogConfig.json 配置文件。您可以使用 xcpLogConfig.json 配置文件启用：

- 事件日志消息
- XCP 的系统日志客户端
- 自定义 XCP 日志记录

在默认配置中，事件日志消息和系统日志客户端处于禁用状态。配置对于 NFS 和 SMB 都是通用的。

配置 JSON 文件位置	NFS	SMB
配置文件默认位置	/opt/netapp/xFiles/XCP/	C : \NetApp\XCP\ConfigFile
自定义位置需要 XCP_config_DIR 环境变量	使用针对`XCP_config_DIR`变量设置的位置	不适用

JSON 配置文件选项区分大小写。这些选项对于 XCP NFS 和 XCP SMB 是相同的。

子选项名称	JSON 数据类型	Default	Description
logconfig			用于自定义 XCP 日志记录的选项。
level	string	信息	日志消息严重性筛选级别。XCP 日志消息按严重性降低的顺序支持五个严重性级别：严重，错误，警告，信息，调试（ NetApp 强烈建议使用 info 或 debug ）
"maxBytes"	整型	52428800	每个旋转日志文件的大小。最多支持 10 个轮换文件。
name	string	xcp.log	用于设置自定义日志文件名称的选项。
EventLog			用于配置事件日志消息的选项。
" 已启用 "	布尔值	true	此布尔选项用于启用事件消息传送。如果将其设置为 false ，则不会生成任何事件消息，也不会将任何事件日志发布到事件日志文件中。
level	string	信息	事件消息严重性筛选级别。事件消息支持按严重性降低的顺序排列的五个严重性级别：严重，错误，警告，信息，调试
系统日志			用于配置系统日志消息的选项。
" 已启用 "	布尔值	false	此布尔选项用于在 XCP 中启用系统日志客户端。
level	string	信息	消息严重性筛选级别。XCP 事件日志消息按严重性降低的顺序支持五个严重性级别：严重，错误，警告，信息，调试
" 服务器 ip"	string	无	远程系统日志服务器 IP 地址或主机名。
port	整型	514.	远程系统日志接收器端口。可以使用端口选项 UDP 端口 514 配置接受其他端口上的系统日志数据报的系统日志接收器，但也可以配置到所需端口。
" 清理 "	布尔值	false	XCP 支持的一个常见选项；将其值设置为 true 会在要支持的消息（日志记录，事件，系统日志等）中隐藏敏感信息（IP 和用户名）。例如，将 sanitize 选项设置为 false： <pre>* 2020-07-17 03 : 10 : 23 , 779 - 信息 - 12806 XCP XCP 路径: ['10.234.104.251 : /cat_vol'] * 2020-07- 12817 03 : 10 : 23 , 778 - 信息 - 12806 XCP XCP 用户名: root` XCP 路径: s2020-07-1217 : ``XCP : XX.XX.XX.XX./cat_vol`] * 2020-07-17 03 : 13 : 51 , 595 - 信息 - 12859 XCP XCP 用户名 * * *</pre>

创建 JSON 配置文件

如果要启用事件日志消息，系统日志客户端或客户日志记录，请完成以下步骤。

步骤

1. 打开任何文本编辑器，例如记事本或 vi 。
2. 使用以下 JSON 模板创建新文件。

```
{
  "logConfig": {
    "level": "INFO",
    "maxBytes": 52428800,
    "name": "xcp.log"
  },
  "eventlog": {
    "isEnabled": false,
    "level": "INFO"
  },
  "syslog": {
    "isEnabled": false,
    "level": "INFO",
    "serverIp": "10.234.219.87",
    "port": 514
  },
  "sanitize": false
}
```

3. 对于要启用的任何功能，请将 `isEnabled` 值更改为 `true`。
4. 将文件命名为 `xcpLogConfig.json` 并将其保存到默认位置：`/opt/netapp/xFiles/XCP/`

如果设置了 `XCP_config_DIR` 环境变量、请将 `xcpLogConfig.json` 文件保存在与 `XCP_config_DIR` 变量设置的相同位置。

默认配置

```
{
  "logConfig": {
    "level": "INFO",
    "maxBytes": 52428800,
    "name": "xcp.log"
  },
  "sanitize": false
}
```

json 配置文件示例

```
{
  "logConfig": {
    "level": "INFO",
    "maxBytes": 52428800,
    "name": "xcp.log"
  },
  "eventlog": {
    "isEnabled": false,
    "level": "INFO"
  },
  "syslog": {
    "isEnabled": false,
    "level": "INFO",
    "serverIp": "10.234.219.87",
    "port": 514
  },
  "sanitize": false
}
```

迁移数据

迁移 NFS 数据

使用规划迁移之后 `show` 和 `scan` 命令中、您可以迁移 NFS 数据。

复制

`copy` 命令可扫描整个源目录结构并将其复制到目标 NFSv3 导出。`copy` 命令要求源路径和目标路径均为变量。扫描和复制的文件，吞吐量 / 速度以及经过的时间详细信息将在复制操作结束时显示

- 示例： *

```
xcp copy <source_nfs_export_path> <destination_nfs_export_path>
```

- POSIX 路径示例： *

```
xcp copy -newid <id> file:///mnt/source file:///mnt/dest
```

运行 `xcp help copy` 有关详细信息：

恢复

`resume` 命令可通过指定目录索引名称或编号来重新启动先前中断的复制操作。先前复制操作的目录索引名称或编号存储在 ``<catalog path> : /catalog /index` 目录中。`

- 示例： *

```
xcp resume -id <catalog_name>
```

运行 `xcp help resume` 有关详细信息：

同步

`sync` 命令可使用目录索引标记名称或先前复制操作的编号扫描对源 NFS 目录执行的更改和修改。源增量更改会复制并应用于目标目录。在同步操作 `#` 之后，旧目录索引编号将替换为新的目录索引编号（.下划线）`#`。

- 示例： *

```
xcp sync -id <catalog_name>
```

运行 `xcp help sync` 有关详细信息：

验证

执行复制操作后，`verify` 命令会对源目录和目标目录进行完整的逐字节数据比较，而不会使用目录索引编号。命令将检查修改时间以及其他文件或目录属性，包括权限。该命令还会读取两端的文件并比较数据。

- 示例：*

```
xcp verify <source_ip_address>:/source_vol
<destination_ip_address>:/dest_vol
```

- POSIX 路径示例：*

```
xcp verify file:///mnt/source file:///mnt/dest
```

运行 `xcp help verify` 有关详细信息：

iSync

。 `isync` 命令会比较源和目标、并同步目标上的差异、而不使用目录索引。

- 示例 *

```
xcp isync <source_ip_address>:/src <destination_ip_address>:/dest
```

您可以使用 `isync` 使用 `estimate` 用于估计所需时间的选项 `isync` 命令以同步增量更改。。 `-id` 参数用于指定先前复制操作的目录名称。



如果更改的数据集大小超过已用数据集大小的25%、则 `isync estimate` 命令可能不会显示预期结果。

- 示例 *

```
xcp isync estimate -id <name>
```

运行 `xcp help isync` 有关详细信息：

迁移 SMB 数据

使用规划迁移之后 `show` 和 `scan` 命令中、您可以迁移SMB数据。

复制

`copy` 命令可扫描整个源目录结构并将其复制到目标 SMB 共享。`copy` 命令要求源路径和目标路径均为变量。扫

描和复制的文件，吞吐量 / 速度和已用时间详细信息每五秒打印一次到控制台。



在复制操作期间，您可以将`-preserve-atime`标志与`copy`命令结合使用，以保留源的访问时间。

• 示例：*

```
C:\xcp>xcp copy \\<IP address or hostname of SMB server>\source_share  
\\<IP address of SMB destination server>\dest_share
```

运行`xcp help copy`有关详细信息：

同步

`sync` 命令可并行扫描源共享和目标共享中的更改和修改，并对目标应用相应的操作（删除，修改，重命名等），以确保目标与源相同。

`sync` 命令可比较数据内容，时间戳，文件属性，所有权和安全信息。



在同步操作期间，您可以将`-preserve-atime`标志与`sync`命令结合使用，以保留源上的访问时间。

• 示例：*

```
C:\xcp>xcp sync \\<IP address or hostname of SMB server>\source_share  
\\<IP address of SMB destination server>\dest_share
```

运行`xcp help sync`有关详细信息：

验证

使用 `verify` 命令可读取源共享和目标共享并对其进行比较，从而提供有关不同之处的信息。无论使用哪种工具执行复制或同步，您都可以在任何源和目标上使用命令。



在验证操作期间，您可以将`-preserve-atime`标志与`verify`命令结合使用，以保留源上的访问时间。

• 示例：*

```
C:\xcp>xcp verify \\<IP address or hostname of SMB server>\source_share  
\\<IP address of SMB destination server>\dest_share
```

运行`xcp help verify`有关详细信息：

SMB的NTFS备用数据流迁移

SMB的NTFS备用数据流迁移

从XCP 1.4.3开始、XCP SMB支持使用迁移NTFS备用数据流 `-ads` 选项。

支持的用例

您可以使用XCP SMB `copy` 和 `sync` 用于迁移包含备用数据流和XCP SMB的数据的命令 `scan` 命令扫描SMB共享以查找备用数据流。

支持的XCP SMB命令

以下XCP SMB命令支持 `-ads` 选项：

- `scan`
- `copy`
- `verify`
- `sync`

命令示例

以下命令示例显示了如何使用 `-ads` 选项：

- `xcp scan -ads \\<SMB share>`
- `xcp copy -ads \\<source SMB share> \\<destination SB share>`
- `xcp sync -ads \\<source SMB share> \\<destination SB share>`
- `xcp verify -ads \\<source SMB share> \\<destination SB share>`

迁移HDFS数据

使用规划迁移之后 `scan` 命令、则可以迁移HDFS数据。

复制

。 `copy` 命令会扫描整个源Hadoop分布式文件系统(Hadoop Distributed File System、HDFS)数据并将其复制到NFS或简单存储服务(Simple Storage Service、S3)分段。。 `copy` 命令要求将源路径和目标路径作为变量。扫描和复制的文件、吞吐量、速度和已用时间详细信息将显示在复制操作结束时。

NFS路径示例：

```
xcp copy -newid <id> hdfs:///demo/user dst_server:/dst_export
```

- POSIX 路径示例： *

```
xcp copy -newid <id> hdfs:///demo/user file:///mnt/dest
```

S3路径示例:

```
xcp copy -newid <id> hdfs:///demo/user s3://my-bucket  
xcp copy -newid <id> -s3.profile <s3 profile name> -s3.endpoint <endpoint-  
url> hdfs:///demo/user s3://my-bucket
```

运行 `xcp help copy` 有关详细信息:

恢复

。 `resume` 命令通过指定目录索引名称或编号来重新启动先前中断的复制操作。上次复制操作的目录索引名称或编号存储在 `<catalog path>:/catalog/indexes` 目录。

- 示例: *

```
xcp resume [options] -id <id used for copy>  
xcp resume [options] -s3.profile <s3 profile name> -s3.endpoint <endpoint-  
url> -id <id used for copy>
```



默认情况下、XCP `resume` 命令使用期间使用的副本索引中的S3端点和S3配置文件 `copy` 命令: 但是、如果是新的 `-s3.endpoint` 和 `-s3.profile` 值随提供 `resume` 命令中、将使用选项的新值以及副本中使用的值 `command` 被覆盖。

运行 `xcp help resume` 有关详细信息:

验证

。 `verify` 命令会在执行复制操作后对源目录和目标目录进行逐字节完整数据比较、而不使用目录索引编号。命令读取两端的文件并比较数据。

- 示例: *

```
xcp verify hdfs:///demo/user dst_server:/dst_export
```

- POSIX 路径示例: *

```
xcp verify hdfs:///user/demo1/data file:///user/demo1/dest
```

S3路径示例:


```
xcp verify hdfs:///user/demo1/data s3://my-bucket
xcp verify -s3.profile <s3 profile name> -s3.endpoint <endpoint-url>
hdfs:///demo/user s3://my-bucket
```

运行 `xcp help verify` 有关详细信息：

在同一XCP主机上运行多个XCP作业

从XCP 1.1.2开始、您可以在一台XCP主机上运行多个XCP作业或命令、但前提是该主机具有足够的资源来执行每个作业。当您运行支持多个作业的命令时、XCP会使用最小的主机内存来完成作业、从而为在同一主机配置上运行其他作业创建容量。

最低系统要求

对于每个XCP作业、您应最多允许64 GB主机内存和八个核心用于大中型迁移。



SMB数据迁移不支持在同一主机上运行多个XCP作业。

日志记录

默认情况下、每个XCP作业都记录在一个单独的日志文件中、该日志文件对于作业ID是唯一的。如果在同一台主机上运行多个作业、则此日志记录机制可以正常运行。NetApp建议不要更改 `xcpLogConfig.Json` 要使用单个的文件 `xcp.log` 用于记录在同一主机上并行运行的多个XCP作业的文件。

支持的命令

以下XCP命令支持在同一主机上运行多个XCP作业：

- scan
- copy
- resume
- verify
- isync
- chmod
- chown
- delete

不支持的命令

不支持在同一主机上运行多个XCP作业 `sync` 命令：

其他 NFS 功能

XCP包括一些其他NFS功能。

chown和chmod

您可以使用 XCP `chown` 和 `chmod` 命令以递归方式更改给定 NFS 共享或 POSIX 路径的所有文件和目录。这样可以提高数百万个文件的性能。



在更改文件的所有权之前，必须配置新所有者。否则，此命令将失败。XCP `chown` 和 `chmod` 命令的工作方式与 Linux `chown` 和 `chmod` 命令类似。

chmod

`chmod` 命令可扫描并更改选定目录结构中所有文件的文件权限。`chmod``命令需要模式或引用以及NFS共享或POSIX路径作为变量。XCP ``chmod`` 递归更改给定路径的权限。您可以使用 `chmod` 命令显示扫描的总文件数以及输出中已更改的权限。

- 示例： *

```
xcp chmod -mode 777 NFS [server:/export path | file://<NFS mounted path>]
xcp chmod -mode 707 nfs_server01.netapp.com:/export1
xcp chmod -reference nfs_server01.netapp.com:/export/dir1/file.txt
nfs_server02.netapp.com: export1
xcp chmod -match "fnm('file.txt')" -mode 111 file:///mnt/nfs_mount_point/
xcp chmod -exclude "fnm('file.txt')" -mode 111 file:///demo/user1/
```

有关详细信息，请运行 XCP `help chmod` 命令。

chown

您可以使用XCP ``chown``命令以递归方式更改给定NFS共享或POSIX路径的所有文件和目录。这样可以提高数百万个文件的性能。

`chown` 命令可扫描并更改选定目录结构中所有文件的所有权。``chown``命令需要使用NFS共享或POSIX路径作为变量。XCP ``chown``递归更改给定路径的所有权。

- 示例 *

```
xcp chown -user user1 NFS [server:/export path | file://<NFS mounted path>
xcp chown -user user1 nfs_server01.netapp.com:/export1
xcp chown -user user1 -group group1 nfs_server01.netapp.com:/export1/dir1/
xcp chown -reference nfs_server01.netapp.com:/export/dir1/file.txt
nfs_server02.netapp.com:/export1
xcp chown -match "fnm('file.txt')" -user user1
file:///mnt/nfs_mount_point/
xcp chown -exclude "fnm('file.txt')" -user user1 -group group1
xcp chown -user-from user1 -user user2 file:///mnt/nfs_mount_point/
xcp chown -group-from group1 -group group2
nfs_server01.netapp.com:/export1/
```

有关详细信息，请运行 `XCP help chown` 命令。

XCP估计

XCP估计功能用于估计完成基线的时间 `copy` 从源到目标的操作。它会计算完成基线的估计时间 `copy` 操作。使用时 `-target` 选项中、XCP会运行示例复制操作以查找估计时间。

- 示例 *

```
server : NFS server IP
export : NFS exported path for the above IP

xcp static estimation
xcp estimate -id <scan id>

xcp live estimation with default time
xcp estimate -id <scan id> -target server:/export

xcp live estimation with -t option
xcp estimate -id <scan id> -t <time for which estimation should run>
-target server:/export
```

索引删除

您可以使用 `indexdelete` 用于删除目录索引的命令。

- 示例 *

```
xcp indexdelete
```

运行 `xcp help indexdelete` 有关详细信息：

故障排除


对 XCP NFS 错误进行故障排除

查看用于对问题描述进行故障排除的解决方案。

XCP问题和解决方案

XCP 问题描述	解决方案
xcp: ERROR: 比较批处理: 索引文件不兼容。请仅使用当前版本的XCP生成的索引文件。或者、您也可以从xcp.netapp.com下载旧版XCP二进制文件。	您正在尝试对使用早于XCP 1.9的XCP版本生成的索引执行操作。不支持此操作。建议完成所有正在进行的迁移、然后切换到此版本的XCP。或者、您也可以重新运行`scan`、`copy`或`verify`命令、以使用XCP 1.9生成新索引。
XCP : 错误: 必须以 root 用户身份运行	以 root 用户身份执行 XCP 命令
XCP : 错误: 未找到许可证文件`/opt/netapp/xFiles/XCP/license`。	从下载许可证 " XCP 站点 ", 将其复制到`/opt/netapp/xFiles/XCP/`, 然后运行 XCP activate 命令将其激活。
XCP : 错误: 此许可证已过期	从续订或获取新的 XCP 许可证 " XCP 站点 "。
XCP : 错误: 许可证不可读	许可证文件可能已损坏。从获取新的 XCP 许可证 " XCP 站点 "。
XCP : 错误: XCP 未激活, 请先运行 "激活"	运行 XCP activate 命令
此副本未获得许可	获取相应的 XCP 许可证文件。将 XCP 许可证复制到 XCP 服务器上的`/opt/NetApp/xFiles/XCP/`目录。运行 XCP activate 命令以激活许可证。
XCP : 错误: 无法激活许可证: 服务器无法访问	您正在尝试激活联机许可证, 并且主机系统未连接到 Internet。确保您的系统已连接到 Internet。
XCP : 错误: 无法激活许可证: 服务器 xcp.netapp.com 不可访问 XCP : 提示: 在此主机上配置 DNS 或返回许可证页面以请求专用许可证预期错误: 无法激活许可证: 服务器 xcp.netapp.com 不可访问	确保可以从主机访问 xcp.netapp.com 或请求脱机许可证
XCP : 错误: 目录不可访问: 无法挂载 nfs_server : /export[: 子目录]	在 XCP Linux 客户端主机上打开编辑器, 然后使用正确的目录位置更新配置文件。XCP 配置文件位于`/opt/netapp/xFiles/XCP/xcp.ini`。配置文件的示例条目: `根@scspr1949387001 ~]# cat /opt/netapp/xFiles/XCP/xcp.ini` XCP]` catalog = 10.235.128.153 : /catalog
nfs3 错误 2: 无此文件或目录	操作未在目标 NFS 导出上找到源文件。运行 XCP sync 命令将增量更新从源复制到目标
XCP : 错误: 索引为空或无效	在创建索引文件之前, 先前的复制操作中断。使用新索引重新运行同一命令, 在执行此命令时, 请验证关键字 "已编制索引" 是否显示在统计信息中。

XCP 问题描述	解决方案
XCP : 错误: 比较批处理: 子进程失败` (退出代码 -9) : recv <type 'Exceptions.EOFError">`	按照以下知识库文章中的说明进行操作: "同步 NFS 数据时无法分配内存"
XCP : 错误: 要使 XCP 处理 ACL , 请` 使用 OS nfs4 客户端挂载`	使用 NFSv4 在 XCP 主机上挂载源和目标, 例如, mount -o vers=4.0 10.10.10.10 : /source_vol /mnt/source
在迁移期间, xcp verify 命令失败。状态显示为 Failed。 (实时)	当源处于活动状态时, 运行了 XCP verify 命令。完成最终转换后, 运行 XCP verify 命令。
在转换后, XCP verify 命令失败。 (实时)	XCP 转换同步操作可能未复制所有数据。在完成最终转换后, 重新运行 XCP sync 命令, 然后运行 verify 命令。如果问题仍然存在, 请联系技术支持。
XCP sync 命令失败 (此适用场景在迁移期间会发生所有同步失败)。 (实时)	XCP 无法读取数据, 这可能是由于 XCP 问题描述造成的。命令操作完成后, 请检查 XCP 状态消息。重新运行 sync 命令。如果同步操作再次失败, 请联系技术支持。
由于内存不足, XCP copy, reresume 和 sync 命令失败。XCP 崩溃, XCP 状态显示为 Failed。 (实时)	主机上的可用内存不足或发生了巨大的增量更改。按照以下知识库文章中的说明进行操作: "同步 NFS 数据时无法分配内存"
mNT3 错误 13 : 权限被拒绝	作为非 root 用户, 您没有访问文件系统的正确权限。检查您是否可以访问文件系统并执行读写操作。
XCP : batch 1 : error : [errno 13] permission denied :	作为非 root 用户, 您没有访问文件系统的正确权限。检查您是否可以访问文件系统并执行读写操作。
mXCP : 错误: OSMounter 'file:///t/10.234.115.215_src_vol/DIR' : 不存在此类文件或目录	路径` /t/10.234.115.215_src_vol/ DIR` 未挂载到 Linux 文件系统中。检查路径是否存在。
错误: run sync { -id : 'Xcp_index_1624263869.3734858' } : 同步尚不可用于 HDFS/ POSIX/s3fs 源和目标 - 临时解决策正在使用匹配筛选器复制最近的 MOD	对于 POSIX 和 HDFS 连接器, XCP 不支持 sync 命令。
使用不同的修改时间时, XCP verify 命令失败	您可以确定文件并手动将文件复制到目标。
无法恢复非目录对象复制 / 同步; 请重试复制。有关详细信息, 请参见 XCP 用户指南。	由于无法恢复单个文件, 因此建议再次对该文件运行 XCP copy 命令。如果对文件进行任何更改, 则会创建完整的文件副本。因此, 性能不会受到影响。
无法同步非目录对象; 请重试复制。有关详细信息, 请参见 XCP 用户指南。	由于无法同步单个文件, 因此建议再次对该文件运行 XCP copy 命令。如果对文件进行任何更改, 则会创建完整的文件副本。因此, 性能不会受到影响。
XCP : 错误: batch 4 : 无法连接到节点:	验证` -- nodes` 参数中指定的节点是否可访问。尝试从主节点使用安全 Shell (SSH) 进行连接
` 权限被拒绝`	检查您是否有权在目标卷上写入数据。
XCP : 错误: 批处理 2 : 子进程失败 (退出代码 -6) : recv <type 'Exceptions.EOFError"> :	增加系统内存并重新运行测试。

XCP 问题描述	解决方案
<pre>xcp:ERROR: invalid path 'IP:/users009/user1/2022-07- 01_04:36:52_1489367</pre>	<p>如果NFS服务器共享路径名称中包含一个或多个冒号、请使用双冒号(: :)而不是单个冒号(:)分隔NFS服务器IP和NFS服务器共享路径。</p>
<p>之后、SnapLock卷不会保留WORM文件 xcp copy 操作。</p>	<p>XCP会成功将WORM文件复制到卷、但SnapLock卷不会保留这些文件。</p> <ol style="list-style-type: none"> 1. 执行 xcp copy 从源卷到目标卷的操作： <pre>xcp copy src_server:/src_export dst_server:/dst_export</pre> 2. 使用 xcp chmod 命令将目标卷上的文件权限更改为*readonly*： <pre>xcp chmod -mode a-w dst_server:/dst_export</pre> <p>完成上述步骤后、SnapLock卷将开始保留复制的文件。</p> <div style="border: 1px solid #ccc; padding: 10px; margin-top: 10px;"> <p> SnapLock卷的保留时间受卷的默认保留策略控制。在开始迁移之前检查卷保留设置："设置保留时间"</p> </div>

日志转储

如果您遇到使用XCP命令或作业的问题描述、则可以使用`logdump`命令将与问题描述 相关的日志文件转储到一个`.zip`文件中、该文件可发送给NetApp进行调试。`logdump`命令会根据迁移ID或作业ID筛选日志、并将这些日志转储到当前目录中的.zip`文件中。`.zip`文件的名称与命令中使用的迁移或作业ID相同。

• 示例 *

```
xcp logdump -j <job id>
xcp logdump -m <migration id>
```



迁移后、如果使用`Xcp_config_DIR`或`Xcp_log_DIR`环境变量覆盖默认配置位置或日志位置、则在使用旧迁移或作业ID时、`logdump`命令将失败。要避免这种情况、请使用相同的日志路径、直到迁移完成。

对XCP SMB错误进行故障排除

查看用于对问题描述进行故障排除的解决方案。

问题描述	解决方案
如果在源或目标中使用接合路径、则XCP命令不会显示预期结果。	运行XCP命令时、请使用SMB共享路径、而不是接合路径。
<p>如果源、目标或两者都是不含目录的接合、并且在迁移中使用了联机许可证、则可能会发生回溯错误。如果发生这种情况、XCP命令状态为 PASSED 但是、控制台输出结束时返回以下错误：</p> <pre> Error in atexit._run_exitfuncs: Traceback (most recent call last): File "xcp\stats.py", line 214, in call_home File "xcp\histograms.py", line 387, in calculate_averages ZeroDivisionError: division by zero </pre>	使用脱机许可证、而不是联机许可证。
XCP : 错误 : 此许可证已过期	从续订或获取新的 XCP 许可证 "XCP 站点"。
此副本未获得许可	获取相应的 XCP 许可证文件。将 XCP 许可证复制到 XCP 主机上的 c : \NetApp\XCP 文件夹。运行 XCP activate 命令以激活许可证
XCP : 错误 : XCP 未激活, 请先运行 "激活 "	从下载 XCP 许可证 "XCP 站点"。复制 XCP Linux 客户端主机上 XCP 主机上的文件, 该主机位于 XCP 主机上的 c : \NetApp\XCP。运行 XCP activate 命令以激活许可证。
XCP : 错误 : 未找到许可证文件 C : \NetApp\XCP\license	在上注册 XCP 许可证 "XCP 站点"。将许可证文件下载并复制到 XCP Windows 客户端主机上的 c : \NetApp\XCP\。
XCP 扫描错误: 找不到网络名称	使用正确的共享名称重新运行命令
XCP 副本错误: 错误无法获取回退安全主体错误消息记录在 xcp.log 文件中: pywintypes.error : (1722 , "LookupAccountName" , "RPC 服务器不可用。 ")	在 hosts 文件 (c : \Windows\System32\drivers\etc\hosts) 中添加目标框。NetApp 存储目标框条目必须采用以下格式: ` <data vserver data interface ip>` 1 或更多空格 ` <cifs server name>`
XCP 副本: 错误 无法获取回退安全主体 (在主机文件中添加目标框条目后) xcp.log 文件中记录的错误消息: `` 未在帐户名称和安全 ID 之间进行映射 ``	回退用户 / 组不在目标系统 (目标框) 或 Active Directory 中。使用正确的回退用户 / 组选项重新运行命令
XCP 副本: 错误 无法获取回退安全主体 (在主机文件中添加目标框条目后) xcp.log 文件中记录的错误消息: pywintypes.error : (87 , "LookupAccountName" , " 参数不正确。 ")	回退用户 / 组选项的参数不正确。使用正确的语法重新运行命令以回退用户 / 组选项

问题描述	解决方案
<p>xcp copy ACL迁移</p> <p>xcp.log文件中记录的错误消息： pywintypes.error: (1314, 'GetNamedSecurityInfo', 'A required privilege is not held by the client.')</p>	<p>与安全描述符相关的问题描述、因为迁移用户帐户仅具有XCP检索所有者、组和DACL所需的权限。无法检索SACL。</p> <p>将您的迁移用户帐户添加到Active Directory中的"管理审核和安全日志"策略。</p> <p>参考 "管理审核和安全日志"</p>

对 XCP 文件分析错误进行故障排除

查看用于对问题描述进行故障排除的解决方案。

问题描述	解决方案
PostgreSQL 服务失败	<p>再次运行 configure 并选择安装选项。如果上次安装成功，则可以选择修复选项。如果仍收到此错误，请按如下所示尝试手动步骤：</p> <ol style="list-style-type: none"> 重新启动 PostgreSQL 服务： <pre>sudo systemctl restart postgresql.service</pre> 检查服务状态： <pre>`sUdo systemctl status postgresql.service</pre>
grep Active`	httpd 服务失败
<p>再次运行 configure 并选择安装选项。如果上次安装成功，则可以选择修复选项。如果仍收到此错误，请按如下所示尝试手动步骤：</p> <ol style="list-style-type: none"> 重新启动 HTTPD 服务： <pre>sudo systemctl restart httpd</pre> 检查 HTTPD 服务状态： <pre>`sUdo systemctl status httpd</pre> 	<p>grep Active`</p>
安装成功后，无法打开登录页面	<p>验证您的系统是否可以对安装了XCP文件分析且HTTPD正在运行的Linux计算机执行ping操作。如果服务未运行，请运行 configure 并选择修复选项。验证您使用的浏览器版本是否受支持。请参见 "IMT"。</p>

问题描述	解决方案
用户登录失败	<ul style="list-style-type: none"> • 验证您使用的浏览器版本是否受支持。请参见 "IMT"。 • 验证用户是否为 "admin" 且密码是否正确。 • 发出 XCP 服务状态 以验证 XCP 服务是否正在运行。 • 验证 Linux 上的端口 5030 是否已打开。打开应用程序： * https : // <Linux IP> : 5030/API/XCP* ，并确认消息消息消息消息消息消息消息： mising Authorization Header 。 • 检查 xcp.ini 文件是否位于 ` /opt/netapp/xFiles/XCP/` 位置。要重置 xcp.ini 文件，请运行配置脚本并选择 * 修复 * 选项。接下来，选择菜单选项以 * 重建 xcp.ini 文件 * 。 • 在命令行界面上手动运行 XCP -listen 命令，然后尝试登录。如果您未在服务器上收到请求，请重新检查安装情况以及用于与服务器通信的端口。s安装是否正确后，运行 service XCP start 命令重新启动服务。
XCP 图形用户界面未显示更新后的页面。	清除缓存并重试。
XCP 服务未启动	要运行 XCP 服务，请使用 sudo systemctl start XCP 命令。或者，运行配置脚本并选择 * 修复 * 选项以启动已停止的服务。
无法扫描文件共享	文件共享 / 卷可能无法读取。运行 XCP show 命令，手动检查文件共享是否可访问 / 读取。此外，请检查是否已删除 xcp.ini 文件。如果删除了此文件，请使用 configure.sh 脚本修复选项重建 xcp.ini 文件。
无法加载文件服务器	尝试刷新页面。如果此问题仍然存在，请在提示符处手动运行 XCP show 命令并检查是否可以扫描文件服务器。如果成功，请向 NetApp 客户支持部门提交服务单。如果失败，请执行手动检查以检查文件服务器是否处于活动状态。检查 xcp.ini 文件和许可证文件是否位于正确的位置。要重置 xcp.ini 文件，请运行配置脚本并选择 * 修复 * 选项。接下来，选择菜单选项 * 重建 xcp.ini 文件。 * 检查 xcpfalogs 日志以查看许可证是否需要续订。
系统重新启动后，不会显示 XCP 文件分析页面	XCP 服务可能已关闭。运行配置脚本并选择 * 修复 * 选项。此操作将重新启动已停止的所有服务。
与分配的物理存储相比，给定文件服务器上导出的文件系统的总空间可能会显示更多空间。	如果卷中存在 qtree 级别的导出，则可能会发生这种情况。例如，如果导出为 ` /vol1` 的卷大小为 10 GB ，并且卷 ` /vol1/qtrees1` 中有一个 qtree ，则 XCP show 命令会将 vol1 size 显示为 10 GB ，并将 qtrees1 size 显示为 10 GB 。XCP 文件分析将对两个导出的空间进行求和，并提供总空间，在本例中为 20 GB 。它不知道 qtrees1 是逻辑空间。

问题描述	解决方案
成功安装后、无法访问此站点或用户登录失败。	<ol style="list-style-type: none">1. 检查XCP服务是否正在运行： <code>service xcp status</code>2. 启动XCP侦听操作并确认没有错误： <code>xcp -listen</code>3. 如果看到以下错误、请使用yum安装CodeReady软件包、例如 <code>yum install codeready-builder-for-rhel-8-x86_64-rpms:</code> <pre>Error: ----- Traceback (most recent call last): File "xcp.py", line 1146, in <module> File "xcp.py", line 1074, in main File "<frozen importlib._bootstrap>", line 991, in _find_and_load File "<frozen importlib._bootstrap>", line 975, in _find_and_load_unlocked File "<frozen importlib._bootstrap>", line 671, in _load_unlocked File "PyInstaller/loader/pyimod03_importers.py" , line 495, in exec_module File "rest/routes.py", line 61, in <module> File "<frozen importlib._bootstrap>", line 991, in _find_and_load File "<frozen importlib._bootstrap>", line 975, in _find_and_load_unlocked File "<frozen importlib._bootstrap>", line 671, in _load_unlocked File "PyInstaller/loader/pyimod03_importers.py" , line 495, in exec_module File "onelogin/saml2/auth.py", line 14, in <module> xmlsec.Error: (1, 'cannot load crypto library for xmlsec.') [23891] Failed to execute script 'xcp' due to unhandled exception!</pre>

XCP参考

XCP命令参考概述

XCP命令参考提供了适用于XCP NFS和SMB的命令示例。每个命令都有其他参数、您可以根据需要单独使用、也可以组合使用。XCP支持根据严重性级别轮换日志文件和筛选日志。

NFS命令参考

帮助

NFS `help` command显示命令列表、命令参数以及每个命令的简要问题描述。。 `help` 对于刚开始使用XCP工具的初学者来说、命令非常有用。

语法

```
xcp help
```

显示示例

```
[root@client1 linux]# ./xcp help
USAGE:
xcp [[help] [command]| -version]
optional arguments:
help Show XCP help message and exit
-version Show XCP version number and exit
To see help text, you can run:
xcp help Display this content
xcp help info Step by step usage of all commands
xcp help <command> Individual command help
command:
activate Activate an XCP license on the current host
license Show XCP license information
show Request information from host about NFS exports
scan Read all the files from export path
copy Recursively copy everything from source to target
resume Resume copy operation from the point it was halted
sync Synchronize increment changes on source to target after copy
isync Sync changes on target without index
verify Verify that the target is the same as the source
delete Delete data on the NFS exported volume
chown Change the ownership on the NFS exported volume
chmod Change the permissions on the NFS exported volume
logdump Collect all logs related to the XCP job and dump those into
        a zipped folder named <ID>.zip under the current dir
estimate Estimate the time taken for the copy command to complete
indexdelete Remove indexes from catalog
```

帮助信息

使用 `info` 参数 `help` 命令以显示文档、示例和调整建议。

语法

```
xcp help info
```

```
[root@client1 linux]# ./xcp help info
COMMAND
info

USAGE
help info

DESCRIPTION
Step by step usage of the XCP command. Follow these steps after you
copy the binary and license

1. Download the XCP license and XCP binary to the Linux machine. Run
XCP activate: xcp activate

2. On a fresh system, the above command will fail when looking for a
license in
/opt/NetApp/xFiles/xcp.
Copy the XCP license to /opt/NetApp/xFiles/xcp and run the activate
command again: xcp activate

3. Check the validity of the license: xcp license

4. Configure the ini file located at /opt/NetApp/xFiles/xcp/xcp.ini
with catalog details: add catalog = catalog_nfs_server:/catalog_path

5. List all the exports and details from the NFS server: xcp show
server

6. Pick up one of the exports and run a scan of the export: xcp scan
server:/export1

7. Initiate baseline copy:
xcp copy -newid id1 server:/export1 server2:/e

8. If the copy is halted for some reason, you can use the "xcp resume"
command to resume the copy operation:
xcp resume -id id1
```

9. Start with incremental sync after the baseline is completed:

```
xcp sync -id id1
```

10. After copy or after every sync, you can verify to check data integrity:

```
xcp verify server:/export1 server2:/export2
```

SUPPORTED COMMANDS

help: Display information about commands and options

-exclude: Display examples of filters

-fmt: Display examples of filters

-match: Display examples of filters

help info: Display documentation, examples, and tuning recommendations

show: Request information from hosts about NFS and other RPC services

-v: Show more detailed information about servers

-loglevel <name>: Option to set log level; available levels are INFO, DEBUG (default: INFO)

scan: Read all the directories in a file tree or a saved index

-l, -q: File listing output formats

-stats, -csv, -html: Tree statistics report formats

-nonames: Do not look up user and group names for file listings or reports

-newid <name>: Catalog name for a new index

-id <name>: Catalog name of a previous copy or scan index

-match <filter>: Only process files and directories that match the filter

-fmt <string expression>: Formatted output

-du: Summarize space usage of each directory, including subdirectories

-md5: Checksum the files (also save the checksum files when indexing) (default: False)

-duk: Summarize space usage of directory, include subdirectories, with output in kilobytes

-acl4: Process NFSv4 access control lists (ACLs)

-acl4.threads <n>: Per-process thread pool size (default: 100)

-depth <n>: Limit the search depth

-dircount <n[k]>: Request size for reading directories (default: 64k)

-edupe: Include deduplication estimate in reports (see documentation for details)

-bs <n[k]>: Read/write block size for scans that read data with -md5 or -edupe (default: 64k)

-parallel <n>: Maximum concurrent batch processes (default: 7)

-noId: Disable the creation of a default index (default: False)

-exclude <filter>: Exclude the files and directories that match the

filter

- preserve-ctime: preserve ctime of the file/dir (default: False)
- nodes <name>: comma-separated list of worker nodes
- s3.insecure: use http instead of https
- s3.noverify: do not verify ssl certificates
- s3.endpoint <S3 endpoint Url>: path such as https://10.10.10.101:1010
- s3.profile <profile-name>: config/cred profile to be used
- loglevel <name>: Option to set log level; available levels are INFO, DEBUG (default: INFO)

copy: Recursively copy everything from source to target

- newid <name>: Catalog name for a new index
- md5: Checksum the files (also save the checksum files when indexing) (default: False)
- edupe: Include deduplication estimate in reports (see documentation for details)
- nonames: Do not look up user and group names for file listings or reports
- acl4: Process NFSv4 access control lists (ACLs)
- acl4.threads <n>: Per-process thread pool size (default: 100)
- acl4.alwaysset: call "setacl" for all ACL-capable files and directories
- bs <n[k]>: read/write blocksize (default: 64k)
- dircount <n[k]>: Request size for reading directories (default: 64k)
- parallel <n>: Maximum concurrent batch processes (default: 7)
- noId: Disable the creation of a default index (default: False)
- match <filter>: Only process files and directories that match the filter

-exclude <filter>: Exclude the files and directories that match the filter

- copybatch <filename [args]>: custom batch processing module
- chown: set destination uid and gid when copying as non-root user (default: False)

- preserve-ctime: preserve ctime of the file/dir (default: False)
- nodes <name>: comma-separated list of worker nodes
- s3.insecure: use http instead of https
- s3.noverify: do not verify ssl certificates
- s3.endpoint <S3 endpoint Url>: path such as https://10.10.10.101:1010
- loglevel <name>: Option to set log level; available levels are INFO, DEBUG (default: INFO)

verify: Verify that the target is the same as the source

[no options]: Full verification of target structure, names, attributes, and data

- stats, -csv: Scan source and target trees in parallel and compare tree statistics
- nodata: Do not check data
- noattrs: Do not check attributes (default: False)

-noown: Do not check ownership (uid and gid) (default: False)
-nomods: Do not check file modification times
-mtimewindow <s>: Acceptable modification time difference for verification
-newid <name>: Catalog name for a new index
-v, -l: Output formats to list any differences found
-acl4: Process NFSv4 access control lists (ACLs)
-acl4.threads <n>: Per-process thread pool size (default: 100)
-nonames: Do not look up user and group names for file listings or reports
-match <filter>: Only process files and directories that match the filter
-bs <n[k]>: read/write blocksize (default: 64k)
-parallel <n>: Maximum concurrent batch processes (default: 7)
-dircount <n[k]>: Request size for reading directories (default: 64k)
-noId: Disable the creation of a default index (default: False)
-exclude <filter>: Exclude the files and directories that match the filter
-preserve-atime: preserve atime of the file/dir (default: False)
-s3.insecure: use http instead of https
-s3.noverify: do not verify ssl certificates
-s3.endpoint <S3 endpoint Url>: path such as https://10.10.10.101:1010
-s3.profile <profile-name>: config/cred profile to be used
-loglevel <name>: Option to set log level; available levels are INFO, DEBUG (default: INFO)

sync: Find all source changes and apply them to the target

-id <name>: Catalog name of a previous copy index
-snap <name or path>: Access a Snapshot copy of the source tree
-nonames: Do not look up user and group names for file listings or reports
-bs <n[k]>: read/write blocksize (default: 64k)
-dircount <n[k]>: Request size for reading directories (default: 64k)
-parallel <n>: Maximum concurrent batch processes (default: 7)
-acl4.threads <n>: Per-process thread pool size (default: 100)
-exclude <filter>: Exclude the files and directories that match the filter
-preserve-atime: preserve atime of the file/dir (default: False)
-loglevel <name>: Option to set log level; available levels are INFO, DEBUG (default: INFO)

sync dry-run: Find source changes but don't apply them to the target

-id <name>: Catalog name of a previous copy index
-snap <name or path>: Access a Snapshot copy of the source tree
-stats: Deep scan the modified directories and report on everything new
-nonames: Do not look up user and group names for file listings or

reports

- v, -l, -q: File listing output formats
- dircount <n[k]>: Request size for reading directories (default: 64k)
- parallel <n>: Maximum concurrent batch processes (default: 7)
- target: Check that the target files match the index
- loglevel <name>: Option to set log level; available levels are INFO, DEBUG (default: INFO)

isync: Sync changes on target without index

- nodata: Do not check data
- noattrs: Do not check attributes
- nomods: Do not check file modification times
- mtimewindow <s>: Acceptable modification time difference for verification
- acl4: Process NFSv4 access control lists (ACLs)
- acl4.threads <n>: Per-process thread pool size (default: 100)
- acl4.alwaysset: call "setacl" for all ACL-capable files and directories
- match <filter>: Only process files and directories that match the filter
- bs <n[k]>: read/write blocksize (default: 64k)
- parallel <n>: Maximum concurrent batch processes (default: 7)
- dircount <n[k]>: Request size for reading directories (default: 64k)
- exclude <filter>: Exclude the files and directories that match the filter
- newid <name>: Catalog name for a new index
- loglevel <name>: Option to set log level; available levels are INFO, DEBUG (default: INFO)
- preserve-ctime: preserve ctime of the file/dir (default: False)
- s3.insecure: use http instead of https
- s3.noverify: do not verify ssl certificates
- s3.endpoint <S3 endpoint Url>: path such as https://10.10.10.101:1010
- s3.profile <profile-name>: config/cred profile to be used

isync estimate: Find the estimated time to complete the next isync command

- nodata: Do not check data
- noattrs: Do not check attributes
- nomods: Do not check file modification times
- mtimewindow <s>: Acceptable modification time difference for verification
- acl4: Process NFSv4 access control lists (ACLs)
- acl4.threads <n>: Per-process thread pool size (default: 100)
- acl4.alwaysset: call "setacl" for all ACL-capable files and

directories

- match <filter>: Only process files and directories that match the filter
- bs <n[k]>: read/write blocksize (default: 64k)
- parallel <n>: Maximum concurrent batch processes (default: 7)
- dircount <n[k]>: Request size for reading directories (default: 64k)
- exclude <filter>: Exclude the files and directories that match the filter
- loglevel <name>: Option to set log level; available levels are INFO, DEBUG (default: INFO)
- preserve-ctime: preserve ctime of the file/dir (default: False)
- s3.insecure: use http instead of https
- s3.noverify: do not verify ssl certificates
- s3.endpoint <S3 endpoint Url>: path such as https://10.10.10.101:1010
- s3.profile <profile-name>: config/cred profile to be used
- id <name>: Catalog name of a previous copy index

resume: Restart an interrupted copy

- id <name>: Catalog name of a previous copy index
- bs <n[k]>: read/write
- s3.insecure: use http instead of https
- s3.noverify: do not verify ssl certificates
- s3.endpoint <S3 endpoint Url>: path such as https://10.10.10.101:1010
- s3.profile <profile-name>: config/cred profile to be used
- loglevel <name>: Option to set log level; available levels are INFO, DEBUG (default: INFO)

delete: Delete everything recursively

- match <filter>: Only process files and directories that match the filter
- force: Delete without confirmation
- removetopdir: remove directory including children
- exclude <filter>: Exclude the files and directories that match the filter
- parallel <n>: Maximum concurrent batch processes (default: 7)
- preserve-ctime: preserve ctime of the file/dir (default: False)
- s3.insecure: use http instead of https
- s3.noverify: do not verify ssl certificates
- s3.endpoint <S3 endpoint Url>: path such as https://10.10.10.101:1010
- s3.profile <profile-name>: config/cred profile to be used
- loglevel <name>: Option to set log level; available levels are INFO, DEBUG (default: INFO)

activate: Activate a license on the current host
-loglevel <name>: Option to set log level; available levels are INFO, DEBUG (default: INFO)

license: Show xcp license info

license update: Retrieve the latest license from the XCP server

chown: changing ownership of a file object
exclude <filter>: Exclude the files and directories that match the filter
-match <filter>: Only process files and directories that match the filter
-group <group>: linux gid to be set at source
-user <user>: linux uid to be set at source
-user-from <userFrom>: user to be changed
-group-from <groupFrom>: group to be changed
-reference <reference>: referenced file or directory point
-v: reports output for every object processed
-preserve-ctime: preserve ctime of the file/dir (default: False)
-loglevel <name>: Option to set log level; available levels are INFO, DEBUG (default: INFO)

chmod: changing permissions of a file object
-exclude <filter>: Exclude the files and directories that match the filter
-match <filter>: Only process files and directories that match the filter
-reference <reference>: referenced file or directory point
-v: reports output for every object processed
-mode <mode>: mode to be set
-preserve-ctime: preserve ctime of the file/dir (default: False)
-loglevel <name>: Option to set log level; available levels are INFO, DEBUG (default: INFO)

logdump: Collect all logs related to the XCP job and dump those into a zipped folder named <ID>.zip under current dir
-m <migration ID>: Filter logs by migration ID
-j <job ID>: Filter logs by job ID

estimate: Use a saved scan index to estimate copy time

```
-id <name>: Catalog name of a previous copy or scan index
-gbit <n>: Gigabits of bandwidth to estimate best-case time (default:
1)
-target <path>: Target to use for live test copy
-t <n[s|m|h]>: Duration of live test copy (default: 5m)
-bs <n[k]>: read/write blocksize (default: 64k)
-dircount <n[k]>: Request size for reading directories (default: 64k)
-parallel <n>: Maximum concurrent batch processes (default: 7)
preserve-ctime:
  preserve ctime of the file/dir (default: False)
-loglevel <name>: Option to set log level; available levels are INFO,
DEBUG (default: INFO)

indexdelete: delete catalog indexes
  -match <filter>: Only process files and directories that match the
filter
  -loglevel <name>: Option to set log level; available levels are INFO,
DEBUG (default: INFO)
```

OUTPUT

In the `-l` output, the size, space used, and modification time are all shown in human-readable format. Time is relative to the current time, so it is time zone independent. For example, "14dlh" means that the file was modified 14 days and one hour ago. Note: "current time" is the time XCP started. The timestamp is saved in the index metadata (catalog:/xFiles/indexes/*.json) and is used for reports against the index.

The `-stats` option prints a human-readable report to the console. Other report format options are `-html` or `-csv`. The comma-separated values (CSV) format has exact values. CSV and HTML reports are automatically saved in the catalog, if there is one.

The histograms for modified, accessed, and changed only count regular files.

FILTERS

A filter expression should evaluate to True or False in Python. Filters are used in XCP for the `-match` and `-exclude` options. See below for some examples of the filters. Use "xcp help <command>" to check which options are supported for commands.

Variables and file attributes currently available to use in a filter: modified, accessed, changed: Floats representing age in hours depth, size, used, uid, gid, type, nlinks, mode, fileid: Integers name, base,

ext: Strings (if name is "demo.sql" then base is == "demo" and ext is == ".sql") owner, group: Strings size units: k, m, g, t, p = K, M, G, T, P = 1024, 1048576, 2**30, 2**40, 2**50 file types: f, d, b, c, l, s, q = F, D, B, C, L, S, Q = 1, 2, 3, 4, 5, 6, 7

Functions available to use in a filter:

rxm(pattern): Regular expression match for each file name
fnm(pattern): Unix-style wildcard match for each file name
load(path): List of lines from a local (external) file
rand(N): Match one out of every N files at random
path(pattern): Wildcard match for the full path
paths(<full_file_path>): Match or exclude all NFS export paths listed in the file
Note: unlike most shell wildcards, pattern "/a/*" will match path /a/b/c

The rxm() function only runs Python re.compile (pattern) once. Similarly, load() only reads its file once.

Filter examples:

Match files modified less than half an hour ago "type == f and modified < .5"

Find anything with "core" in the name ("in" is a Python operator):
"'core' in name"

Same match using regular expressions: "rxm('.*core.*')"

Same match using wildcards: "fnm('*core*')"

Match files that are not regular files, directories, or links: "type not in (f,d,l)"

Find jpg files over 500 megabytes (M is a variable): "fnm('*.jpg') and size > 500*M"

Find files with "/demo/smith" in the path (x is the file; str(x) is its full path): "'/demo/smith' in str(x)"

Exclude copying anything with "f" in its name: "fnm('*f*')"

Exclude multiple export paths specified in "/root/excludePaths.txt".
"paths('/root/excludePaths.txt')"

The file "excludePaths.txt" may contain multiple export paths where each path is listed on a new line.

The export paths may contain wildcards.

For example, `10.10.1.10:/source_vol/*.txt` in file `excludePaths.txt` will exclude all files having `".txt"` extension

If there are incremental changes in previously included directories and you want to exclude anything that has `"dir40"` as a substring in its name, you can specify the new exclude filter with the `sync`. This overrides the exclude filter used previously with the `copy` command and applies the new exclude filter.

Note that if there are incremental changes on the source after the copy operation and there are files with `"f"` in their name, then these are copied on to the target when the `sync` operation is performed. If you want to avoid copying such files or directories, you can use the following command: `xcp sync -exclude "'f' in name" -id <id>`

PERFORMANCE

On Linux, please set the following in `/etc/sysctl.conf` and run `"sysctl -p"`:

```
net.core.rmem_default = 1342177
net.core.rmem_max = 16777216
net.core.wmem_default = 1342177
net.core.wmem_max = 16777216
net.ipv4.tcp_rmem = 4096 1342177 16777216
net.ipv4.tcp_wmem = 4096 1342177 16777216
net.core.netdev_max_backlog = 300000
net.ipv4.tcp_fin_timeout = 10
```

Make sure that your system has multiple CPUs and at least a few gigabytes (GBs) of free memory.

Searching, checksumming or copying hundreds of thousands or millions of files should be many times faster with XCP than with standard tools such `cp`, `find`, `du`, `rsync`, or OS drag-and-drop.

For the case of a single file, reading or copying with XCP is usually faster with a faster host CPU. When processing many files, reading or copying is faster with more cores or CPUs.

The main performance throttle option is `-parallel` for the maximum number of concurrent processes as the number of concurrent directories being read and files being processed. For small numbers of files and/or when there is a network quality of service (QoS) limiter, you might also be able to increase performance by opening multiple channels. The usage section above shows how to use multiple host target addresses. The same syntax also opens more channels to a single target.

For example: "host1,host1:/vol/src" makes each XCP process open two channels to host1. In some WAN environments, this can improve performance. Within a datacenter, if there are only 1 GbE network interface cards (NICs) on the host with XCP it usually helps to use the multipath syntax to leverage more than one NIC.

To verify that you are running I/O over multiple paths, use OS tools to monitor network I/O. For example, on Linux, try "sar -n DEV 2 200".

ENVIRONMENT VARIABLES

XCP_CONFIG_DIR: Override the default location /opt/NetApp/xFiles/xcp. If set, the value should be an OS filesystem path, possibly a mounted NFS directory. When XCP_CONFIG_DIR is set, a new directory with name same as hostname is created inside the custom configuration directory path wherein new logs will be stored.

XCP_LOG_DIR: Override the default, which stores the XCP log in the configuration directory. If set, the value should be an OS filesystem path, possibly a mounted NFS directory. When XCP_LOG_DIR is set, a new directory with name same as hostname is created inside the custom log directory path wherein new logs will be stored.

XCP_CATALOG_PATH: Override the setting in xcp.ini. If set, the value should be in the XCP path format, server:export[:subdirectory].

SECURITY

All the files and directories in the catalog are world readable except for the index files, which have a ".index" suffix and are located in subdirectories under the top-level catalog "indexes" directory. Because each index file is essentially an archive of metadata of an entire file tree, the catalog should be stored on a NetApp volume with export permissions matching the the actual sources and targets. Note that file data is not stored in the index, only metadata.

SUPPORT

<https://www.netapp.com/us/contact-us/support.aspx>

显示

NFS show 命令用于查询一个或多个存储服务器的RPC服务和NFS导出。命令还会列出可用服务和导出、并显示每个导出的已用容量和可用容量、后跟每个导出的根属性。

语法

```
xcp show <ip_address_or_host_name>
```



- 。 show 命令需要导出的NFSv3系统的主机名或IP地址。


```
[root@localhost linux]# ./xcp show <IP address or hostname of NFS
server>

getting pmap dump from <IP address or hostname of NFS server> port
111... getting export list from <IP address or hostname of NFS
server>...
sending 3 mounts and 12 nfs requests to <IP address or hostname of NFS
server>...

== RPC Services ==
'<IP address or hostname of NFS server>': UDP rpc services: MNT v1/2/3,
NFS v3, NLM v4, PMAP v2/3/4, STATUS v1
'<IP address or hostname of NFS server>': TCP rpc services: MNT v1/2/3,
NFS v3/4, NLM v4, PMAP v2/3/4, STATUS v1

== NFS Exports == Mounts Errors Server
3    0 <IP address or hostname of NFS server>

Space      Files    Space      Files
Free       Free     Used       Used Export

93.9 MiB   19,886  1.10 MiB   104 <IP address or hostname of NFS
server>:/
9.44 GiB   2.49M   65.7 MiB   276 <IP address or hostname of NFS
server>:/catalog_vol
84.9 GiB   22.4M   593 MiB 115 <IP address or hostname of NFS
server>:/source_vol

== Attributes of NFS Exports ==
drwxr-xr-x --- root root 4KiB 4KiB 6d2h <IP address or hostname of
NFSserver>:/
drwxr-xr-x --- root root 4KiB 4KiB 6d2h <IP address or hostname of NFS
server>:/catalog_vol
drwxr-xr-x --- root root 4KiB 4KiB 1h30m <IP address or hostname of NFS
server>:/source_vol

Xcp command : xcp show <IP address or hostname of NFS server>
0 error
Speed   : 3.62 KiB in (17.9 KiB/s), 6.28 KiB out (31.1 KiB/s) Total
Time   : 0s.
STATUS  : PASSED
```

show -v

使用 `-v` 参数 `show` 命令以返回有关使用IP地址或主机名的NFS服务器的详细信息。

语法

```
xcp show -v
```

license

`NFS license` 命令可显示XCP许可证信息。

运行此命令之前、请确认许可证文件已下载并复制到 `/opt/NetApp/xFiles/xcp/` XCP Linux客户端主机上的目录。

语法

```
xcp license
```

显示示例

```
[root@localhost /]# ./xcp license

Licensed to "XXX, NetApp Inc, XXX@netapp.com" until Sun Mar 31 00:00:00
2029 License type: SANDBOX
License status: ACTIVE
Customer name: N/A
Project number: N/A
Offline Host: Yes
Send statistics: No
Host activation date: N/A
License management URL: https://xcp.netapp.com
```

许可证更新

使用 `update` 参数 `license` 命令以从XCP服务器检索最新许可证。

语法

```
xcp license update
```

显示示例

```
[root@localhost /]# ./xcp license update

XCP <version>; (c) yyyy NetApp, Inc.; Licensed to XXX [NetApp Inc]
until Sun Mar 31 00:00:00 yyyy
```

激活

`NFS activate` 命令可激活XCP许可证。



运行此命令之前、请确认许可证文件已下载并复制到 `opt/NetApp/xFiles/xcp/ XCP Linux`客户端主机上的目录。

语法

```
xcp activate
```

显示示例

```
[root@localhost linux]# ./xcp activate

XCP activated
```

扫描

`XCP NFS scan` 命令会以递归方式扫描源NFS3导出的整个路径、并返回文件结构统计信息。

NetApp建议在扫描操作期间将源NFS导出挂载置于只读模式。

语法

```
xcp scan <source_nfs_export_path>
```

显示示例

```
[root@localhost linux]# ./xcp scan <IP address of NFS server>:/

source_vol
source_vol
source_vol/r1.txt
source_vol/USER.1
source_vol/USER.2
source_vol/USER.1/FILE_1
source_vol/USER.1/FILE_2
source_vol/USER.1/FILE_3
source_vol/USER.1/FILE_4
source_vol/USER.1/FILE_5
source_vol/USER.1/file1.txt
source_vol/USER.1/file2.txt
source_vol/USER.1/logfile.txt
source_vol/USER.1/log1.txt
source_vol/USER.2/FILE_1
source_vol/USER.2/FILE_5
source_vol/USER.2/FILE_2
source_vol/USER.2/FILE_3
source_vol/USER.2/FILE_4
Xcp command : xcp scan <IP address of NFS server>:/source_vol
```

下表列出了 scan 参数及其问题描述。

参数	Description
扫描-l	以长列表输出格式列出文件。
扫描-q	显示扫描的文件数。
扫描-stats.	以树统计信息报告格式列出文件。
扫描.csv	以树统计CSV报告格式列出文件。
扫描-html	以树统计HTML报告格式列出文件。
[扫描-nonames]	从文件列表和报告中排除用户和组名称。
<<nfs_scan_newid,扫描-newid (); 名称和gt;	指定新索引的目录名称。
<<nfs_scan_id,扫描-id	指定上一个副本或扫描索引的目录名称。
<<nfs_scan_match,扫描-匹配过滤器	仅处理与筛选器匹配的文件和目录。
<<nfs_scan_fmt,scan -fmgt string_Expression >	仅处理与格式匹配的文件和目录。
扫描-du	汇总了每个目录(包括子目录)的空间使用量。

参数	Description
<<nfs_scan_md5,扫描-md5	在文件上生成校验和、并在编制索引时保存校验和(默认值: false)。
<<nfs_scan_depth,扫描深度(); n	限制搜索深度。
<<nfs_scan_dircount,扫描-dircount (); n[k]	指定读取目录时的请求大小。
扫描重复数据删除	在报告中包括重复数据删除估计值。
<<nfs_scan_bs,扫描-BS [k]	为使用读取数据的扫描指定读/写块大小 -md5 或 -edupe (默认值: 64K)。
<<nfs_scan_parallel,扫描-并行(); n	指定并发批处理进程的最大数量(默认值: 7)。
扫描-nold	禁止创建默认索引(默认值: false)。
扫描-subdir-names"	检索目录中顶级子目录的名称。
[扫描-保留-环境]	将源上的所有文件还原到上次访问的日期。
[扫描-s3.insecure]	提供使用HTTP而非HTTPS进行S3存储分段通信的选项。
<<nfs_scan_endpoint,扫描-s3.endpoint	使用为S3存储分段通信指定的URL覆盖默认Amazon Web Services (AWS)端点URL。
<<nfs_scan_s3_profile,扫描-s3.profile () ; proscy_name	从AWS凭据文件中指定用于S3存储分段通信的配置文件。
[扫描-s3.noverify]	覆盖S3存储分段通信的SSL证书的默认验证。

扫描-l

使用 -l 参数 scan 命令以长列表输出格式列出文件。

语法

```
xcp scan -l <ip_address_or_hostname>:/source_vol
```

显示示例

```
root@localhost linux]# ./xcp scan -l <IP address or hostname of
NFSserver>:/source_vol

drwxr-xr-x --- root root 4KiB 4KiB 6s source_vol
drwxr-xr-x --- root root 4KiB 4KiB 42s source_vol/USER.1
drwxr-xr-x --- root root 4KiB 4KiB 42s source_vol/USER.2
rw-r--r-- --- root root 1KiB 4KiB 42s source_vol/USER.1/FILE_1
rw-r--r-- --- root root 1KiB 4KiB 42s source_vol/USER.1/FILE_2
rw-r--r-- --- root root 1KiB 4KiB 42s source_vol/USER.1/FILE_3
rw-r--r-- --- root root 1KiB 4KiB 42s source_vol/USER.1/FILE_4
rw-r--r-- --- root root 1KiB 4KiB 42s source_vol/USER.1/FILE_5
rw-r--r-- --- root root 1KiB 4KiB 42s source_vol/USER.2/FILE_1
rw-r--r-- --- root root 1KiB 4KiB 42s source_vol/USER.2/FILE_5
rw-r--r-- --- root root 1KiB 4KiB 42s source_vol/USER.2/FILE_2
rw-r--r-- --- root root 1KiB 4KiB 42s source_vol/USER.2/FILE_3
rw-r--r-- --- root root 1KiB 4KiB 42s source_vol/USER.2/FILE_4
Xcp command : xcp scan -l <IP address or hostname of NFS
server>:/source_vol
13 scanned, 0 matched, 0 error
Speed : 3.73 KiB in (4.89 KiB/s), 756 out (989/s)
Total Time : 0s.
STATUS : PASSED
```

扫描-q

使用 -q 参数 scan 命令以显示扫描的文件数。

语法

```
xcp scan -q <ip_address_or_hostname>:/source_vol
```

显示示例

```
[root@localhost linux]# ./xcp scan -q <IP address or hostname of NFSserver>:/source_vol
```

```
Xcp command : xcp scan -q <IP address or hostname of NFS server>:/source_vol  
13 scanned, 0 matched, 0 error  
Speed : 3.73 KiB in (3.96 KiB/s), 756 out(801/s)  
Total Time : 0s.  
STATUS : PASSED
```

scan -stats, scan -csv和scan -html

使用 `-stats`, `-csv`, 和 `-html` 参数 `scan` 命令以树统计信息报告格式列出文件。



XCP报告(.csv、.html)保存在中指定的目录位置 `xcp.ini` 文件这些文件存储在中 `<catalog path>/catalog/indexes/1/reports` 文件夹。您可以在附录中查看示例报告。

语法

```
xcp scan -stats <ip_address>:/source_vol
```

显示示例

```
root@client1 linux]# ./xcp scan -stats <ip_address>:/fgl

Job ID: Job_2023-11-23_23.23.33.930501_scan
== Maximum Values ==
Size Used Depth File Path Namelen Dirsize
50.4 MiB 50.6 MiB 1 24 20 33
== Average Values ==
Size Depth Namelen Dirsize
15.3 MiB 0 6 33
== Top Space Users ==
root
107 MiB
== Top File Owners ==
root
34
== Top File Extensions ==
.sh .out .py .shl other
8 2 2 1 20
16.0 KiB 3.09 MiB 448 1.48 KiB 502 MiB
== Number of files ==
empty <8KiB 8-64KiB 64KiB-1MiB 1-10MiB 10-100MiB >100MiB
20 1 2 10
== Space used ==
empty <8KiB 8-64KiB 64KiB-1MiB 1-10MiB 10-100MiB >100MiB
76 KiB 12 KiB 5.16 MiB 102 MiB
== Directory entries ==
empty 1-10 10-100 100-1K 1K-10K >10K

== Depth ==
0-5 6-10 11-15 16-20 21-100 >100
34
== Accessed ==
>1 year9-12 months 6-9 months 3-6 months 1-3 months 1-31 days 1-24 hrs
<1 hour <15 mins
future
33
505 MiB
== Modified ==
>1 year9-12 months 6-9 months 3-6 months 1-3 months 1-31 days 1-24 hrs
<1 hour <15 mins
future
16
17
400 MiB 105
```



```
MiB
== Changed ==
>1 year9-12 months 6-9 months 3-6 months 1-3 months 1-31 days 1-24 hrs
<1 hour <15 mins
future
16
17
400 MiB 105
MiB
== Path ==
0-1024 >1024
33
Total count: 34
Directories: 1
Regular files: 33
Symbolic links: None
Special files: None
Hard links: None
Multilink files: None
Space Saved by Hard links (KB): 0
Sparse data: N/A
Dedupe estimate: N/A
Total space for regular files: size: 505 MiB, used: 107 MiB
Total space for symlinks: size: 0, used: 0
Total space for directories: size: 8 KiB, used: 8 KiB
Total space used: 107 MiB
Xcp command : xcp scan -stats <ip_address>:/fgl
Stats : 34 scanned
Speed : 6.35 KiB in (7.23 KiB/s), 444 out (506/s)
Total Time : 0s.
Job ID : Job_2023-11-23_23.23.33.930501_scan
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/
Job_2023-11-23_23.23.33.930501_scan.log

STATUS : PASSED
[root@client 1 linux]#
```

语法

```
xcp scan -csv <ip_address_or_hostname>:/source_vol
```

显示示例

```
root@localhost linux]# ./xcp scan -csv <IP address or hostname of NFS
server>:/source_vol

scan <IP address or hostname of NFS server>:/source_vol
options,"{'-csv': True}"
summary,"13 scanned, 3.73 KiB in (11.3 KiB/s), 756 out (2.23 KiB/s),
0s."
Maximum Values,Size,Used,Depth,Namelen,Dirsize
Maximum Values,1024,4096,2,10,5
Average Values,Namelen,Size,Depth,Dirsize
Average Values,6,1024,1,4
Top Space Users,root
Top Space Users,53248
Top File Owners,root
Top File Owners,13
Top File Extensions,other
Top File Extensions,10
Number of files,empty,<8KiB,8-64KiB,64KiB-1MiB,1-10MiB,10-
100MiB,>100MiB
Number of files,0,10,0,0,0,0,0
Space used,empty,<8KiB,8-64KiB,64KiB-1MiB,1-10MiB,10-100MiB,>100MiB
Space used,0,40960,0,0,0,0,0
Directory entries,empty,1-10,10-100,100-1K,1K-10K,>10K
Directory entries,0,3,0,0,0,0
Depth,0-5,6-10,11-15,16-20,21-100,>100
Depth,13,0,0,0,0,0
Accessed,>1 year,>1 month,1-31 days,1-24 hrs,<1 hour,<15 mins,future
Accessed,0,0,0,0,0,10,0
Modified,>1 year,>1 month,1-31 days,1-24 hrs,<1 hour,<15 mins,future
Modified,0,0,0,0,0,10,0
Changed,>1 year,>1 month,1-31 days,1-24 hrs,<1 hour,<15 mins,future
Changed,0,0,0,0,0,10,0

Total count,13
Directories,3
Regular files,10
Symbolic links,0
Special files,0
Hard links,0,
multilink files,0,
Space Saved by Hard links (KB),0
Sparse data,N/A
Dedupe estimate,N/A
Total space for regular files,size,10240,used,40960
```

```
Total space for symlinks,size,0,used,0
Total space for directories,size,12288,used,12288
Total space used,53248
Xcp command : xcp scan -csv <IP address or hostname of NFS
server>:/source_vol
13 scanned, 0 matched, 0 error
Speed : 3.73 KiB in (11.2 KiB/s), 756 out (2.22 KiB/s)
Total Time : 0s.
STATUS : PASSED
```

语法

```
xcp scan -html <ip_address_or_hostname>:/source_vol
```

显示示例

```
root@localhost linux]# ./xcp scan -html <IP address or hostname of NFS
server>:/source_vol

<!DOCTYPE html PUBLIC "-//W3C//DTD HTML
4.01//EN""http://www.w3.org/TR/html4/strict.dtd">
<html><head>
[redacted HTML contents]
</body></html>
Xcp command : xcp scan -html <IP address or hostname of
NFSserver>:/source_vol
13 scanned, 0 matched, 0 error
Speed : 3.73 KiB in (4.31 KiB/s), 756 out(873/s)
Total Time : 0s.
STATUS : PASSED
[root@localhost source_vol]#
```

扫描-nonames

使用 `-nonames` 参数 `scan` 用于从文件列表或报告中排除用户和组名称的命令。



与结合使用时 `scan` 命令、`-nonames` 参数仅使用返回的适用场景文件列表 `-l` 选项

语法

```
xcp scan -nonames <ip_address_or_hostname>:/source_vol
```

显示示例

```
[root@localhost linux]# ./xcp scan -nonames <IP address or hostname of
NFS server>:/source_vol

source_vol
source_vol/USER.1
source_vol/USER.2
source_vol/USER.1/FILE_1
source_vol/USER.1/FILE_2
source_vol/USER.1/FILE_3
source_vol/USER.1/FILE_4
source_vol/USER.1/FILE_5
source_vol/USER.2/FILE_1
source_vol/USER.2/FILE_5
source_vol/USER.2/FILE_2
source_vol/USER.2/FILE_3
source_vol/USER.2/FILE_4
Xcp command : xcp scan -nonames <IP address or hostname of
NFSserver>:/source_vol
13 scanned, 0 matched, 0 error
Speed : 3.73 KiB in (4.66 KiB/s), 756 out(944/s)
Total Time : 0s.
STATUS : PASSED
```

扫描-newid <name>

使用 -newid <name> 参数 scan 命令、用于在运行扫描时指定新索引的目录名称。

语法

```
xcp scan -newid <name> <ip_address_or_hostname>:/source_vol
```

显示示例

```
[root@localhost linux]# ./xcp scan -newid ID001 <IP address or hostname of NFS server>:/source_vol

Xcp command : xcp scan -newid ID001 <IP address or hostname of NFS server>:/source_vol
13 scanned, 0 matched, 0 error
Speed : 13.8 KiB in (17.7 KiB/s), 53.1 KiB out (68.0 KiB/s)
Total Time : 0s.
STATUS : PASSED
```

扫描-id <catalog_name>

使用 `-id` 参数 `scan` 命令以指定先前副本或扫描索引的目录名称。

语法

```
xcp scan -id <catalog_name>
```

显示示例

```
[root@localhost linux]# ./xcp scan -id 3

xcp: Index: {source: 10.10.1.10:/vol/ex_s01/etc/keymgr, target: None}
keymgr/root/cacert.pem
keymgr/cert/secureadmin.pem
keymgr/key/secureadmin.pem
keymgr/csr/secureadmin.pem
keymgr/root
keymgr/csr
keymgr/key
keymgr/cert
keymgr
9 reviewed, 11.4 KiB in (11.7 KiB/s), 1.33 KiB out (1.37 KiB/s), 0s.
```

扫描-匹配<filter>

使用 `-match <filter>` 参数 `scan` 命令以指定仅处理与筛选器匹配的文件和目录。

语法

```
xcp scan -match <filter> <ip_address_or_hostname>:/source_vol
```

显示示例

```
root@localhost linux]# ./xcp scan -match bin <IP address or hostname of
NFS server>:/source_vol

source_vol
source_vol/USER.1/FILE_1
source_vol/USER.1/FILE_2
source_vol/USER.1/FILE_3
source_vol/USER.1/FILE_4
source_vol/USER.1/FILE_5
source_vol/USER.1/file1.txt
source_vol/USER.1/file2.txt
source_vol/USER.1/logfile.txt
source_vol/USER.1/log1.txt
source_vol/r1.txt
source_vol/USER.1
source_vol/USER.2
source_vol/USER.2/FILE_1
source_vol/USER.2/FILE_5
source_vol/USER.2/FILE_2
source_vol/USER.2/FILE_3
source_vol/USER.2/FILE_4
Filtered: 0 did not match
Xcp command : xcp scan -match bin <IP address or hostname of
NFSserver>:/source_vol
18 scanned, 18 matched, 0 error
Speed : 4.59 KiB in (6.94 KiB/s), 756 out (1.12KiB/s)
Total Time : 0s.
STATUS : PASSED
```

扫描-f以及<string_expression>

使用 -fmt 参数 scan 命令以指定仅返回与指定格式匹配的文件和目录。

语法

```
xcp scan -fmt <string_expression> <ip_address_or_hostname>:/source_vol
```

```
[root@localhost linux]# ./xcp scan -fmt "'{ }, { }, { }, { },
{ }'.format(name, x, ctime, atime, mtime)"
<IP address or hostname of NFS server>:/source_vol

source_vol, <IP address or hostname of NFS server>:/source_vol,
1583294484.46, 1583294492.63,
1583294484.46
ILE_1, <IP address or hostname of NFS
server>:/source_vol/USER.1/FILE_1, 1583293637.88,
1583293637.83, 1583293637.83
FILE_2, <IP address or hostname of NFS
server>:/source_vol/USER.1/FILE_2, 1583293637.88,
1583293637.83, 1583293637.84
FILE_3, <IP address or hostname of NFS
server>:/source_vol/USER.1/FILE_3, 1583293637.88,
1583293637.84, 1583293637.84
FILE_4, <IP address or hostname of NFS
server>:/source_vol/USER.1/FILE_4, 1583293637.88,
1583293637.84, 1583293637.84
FILE_5, <IP address or hostname of NFS
server>:/source_vol/USER.1/FILE_5, 1583293637.88,
1583293637.84, 1583293637.84
file1.txt, <IP address or hostname of NFS
server>:/source_vol/USER.1/file1.txt, 1583294284.78,
1583294284.78, 1583294284.78
file2.txt, <IP address or hostname of NFS
server>:/source_vol/USER.1/file2.txt, 1583294284.78,
1583294284.78, 1583294284.78
logfile.txt, <IP address or hostname of NFS
server>:/source_vol/USER.1/logfile.txt,
1583294295.79, 1583294295.79, 1583294295.79
log1.txt, <IP address or hostname of NFS
server>:/source_vol/USER.1/log1.txt, 1583294295.8,
1583294295.8, 1583294295.8
r1.txt, <IP address or hostname of NFS server>:/source_vol/r1.txt,
1583294484.46, 1583294484.45,
1583294484.45
USER.1, <IP address or hostname of NFS server>:/source_vol/USER.1,
1583294295.8, 1583294492.63,
1583294295.8
USER.2, <IP address or hostname of NFS server>:/source_vol/USER.2,
1583293637.95, 1583294492.63,
1583293637.95
```

```
FILE_1, <IP address or hostname of NFS
server>:/source_vol/USER.2/FILE_1, 1583293637.95,
1583293637.94, 1583293637.94
FILE_5, <IP address or hostname of NFS
server>:/source_vol/USER.2/FILE_5, 1583293637.96,
1583293637.94, 1583293637.94
FILE_2, <IP address or hostname of NFS
server>:/source_vol/USER.2/FILE_2, 1583293637.96,
1583293637.95, 1583293637.95
FILE_3, <IP address or hostname of NFS
server>:/source_vol/USER.2/FILE_3, 1583293637.96,
1583293637.95, 1583293637.95
FILE_4, <IP address or hostname of NFS
server>:/source_vol/USER.2/FILE_4, 1583293637.96,
1583293637.95, 1583293637.96
Xcp command : xcp scan -fmt '{} , {} , {} , {} , {}'.format(name, x, ctime,
atime, mtime) <IP address
or hostname of NFS server>:/source_vol
18 scanned, 0 matched, 0 error
Speed : 4.59 KiB in (4.14 KiB/s), 756 out (683/s)
Total Time : 1s.
STATUS : PASSED
```

扫描-du

使用 -du 参数 scan 命令总结每个目录(包括子目录)的空间使用量。

语法

```
xcp scan -du <ip_address_or_hostname>:/source_vol
```


显示示例

```
[root@localhost linux]# ./xcp scan -du <IP address or hostname of
NFSserver>:/source_vol

24KiB source_vol/USER.1
24KiB source_vol/USER.2
52KiB source_vol
Xcp command : xcp scan -du <IP address or hostname of
NFSserver>:/source_vol
18 scanned, 0 matched, 0 error
Speed : 4.59 KiB in (12.9 KiB/s), 756 out (2.07KiB/s)
Total Time : 0s.
STATUS : PASSED
```

扫描-MD5 <string_expression>

使用 `-md5` 参数 `scan` 命令为文件列表生成校验和并在编制索引时保存校验和。默认值设置为`false`。



校验和不用于文件验证；它们仅用于扫描操作期间的文件列表。

语法

```
xcp scan -md5 <ip_address_or_hostname>:/source_vol
```

显示示例

```
root@localhost linux]# ./xcp scan -md5 <IP address or hostname of
NFSserver>:/source_vol

source_vol
d47b127bc2de2d687ddc82dac354c415 source_vol/USER.1/FILE_1
d47b127bc2de2d687ddc82dac354c415 source_vol/USER.1/FILE_2
d47b127bc2de2d687ddc82dac354c415 source_vol/USER.1/FILE_3
d47b127bc2de2d687ddc82dac354c415 source_vol/USER.1/FILE_4
d47b127bc2de2d687ddc82dac354c415 source_vol/USER.1/FILE_5
d41d8cd98f00b204e9800998ecf8427e source_vol/USER.1/file1.txt
d41d8cd98f00b204e9800998ecf8427e source_vol/USER.1/file2.txt
d41d8cd98f00b204e9800998ecf8427e source_vol/USER.1/logfile.txt
d41d8cd98f00b204e9800998ecf8427e source_vol/USER.1/log1.txt
e894f2344aaa92289fb57bc8f597ffa9 source_vol/r1.txt
source_vol/USER.1
source_vol/USER.2
d47b127bc2de2d687ddc82dac354c415 source_vol/USER.2/FILE_1
d47b127bc2de2d687ddc82dac354c415 source_vol/USER.2/FILE_5
d47b127bc2de2d687ddc82dac354c415 source_vol/USER.2/FILE_2
d47b127bc2de2d687ddc82dac354c415 source_vol/USER.2/FILE_3
d47b127bc2de2d687ddc82dac354c415 source_vol/USER.2/FILE_4
Xcp command : xcp scan -md5 <IP address or hostname of NFS
server>:/source_vol
18 scanned, 0 matched, 0 error
Speed : 16.0 KiB in (34.5 KiB/s), 2.29 KiB out (4.92 KiB/s)
Total Time : 0s.
STATUS : PASSED
```

扫描深度<n>

使用 `-depth <n>` 参数 `scan` 命令以限制扫描的搜索深度。。 `-depth <n>` 参数用于指定XCP可扫描文件的子目录深度。例如、如果指定数字2、则XCP将仅扫描前两个子目录级别。

语法

```
xcp scan -depth <n> <ip_address_or_hostname>:/source_vol
```

显示示例

```
[root@localhost linux]# ./xcp scan -depth 2 <IP address or hostname of
NFS server>:/source_vol

source_vol
source_vol/r1.txt
source_vol/USER.1
source_vol/USER.2
source_vol/USER.1/FILE_1
source_vol/USER.1/FILE_2
source_vol/USER.1/FILE_3
source_vol/USER.1/FILE_4
source_vol/USER.1/FILE_5
source_vol/USER.1/file1.txt
source_vol/USER.1/file2.txt
source_vol/USER.1/logfile.txt
source_vol/USER.1/log1.txt
source_vol/USER.2/FILE_1
source_vol/USER.2/FILE_5
source_vol/USER.2/FILE_2
source_vol/USER.2/FILE_3
source_vol/USER.2/FILE_4
Xcp command : xcp scan -depth 2 <IP address or hostname of
NFSserver>:/source_vol
18 scanned, 0 matched, 0 error
Speed : 4.59 KiB in (6.94 KiB/s), 756 out (1.12KiB/s)
Total Time : 0s.
STATUS : PASSED
```

扫描-dircount <n[k]>

使用 -dircount <n[k]> 参数 scan 命令指定在扫描中读取目录时的请求大小。默认值为64k。

语法

```
xcp scan -dircount <n[k]> <ip_address_or_hostname>:/source_vol
```

显示示例

```
[root@localhost linux]# ./xcp scan -dircount 64k <IP address or
hostname of NFS server>:/source_vol

source_vol
source_vol/USER.1/FILE_1
source_vol/USER.1/FILE_2
source_vol/USER.1/FILE_3
source_vol/USER.1/FILE_4
source_vol/USER.1/FILE_5
source_vol/USER.1/file1.txt
source_vol/USER.1/file2.txt
source_vol/USER.1/logfile.txt
source_vol/USER.1/log1.txt
source_vol/r1.txt
source_vol/USER.1
source_vol/USER.2
source_vol/USER.2/FILE_1
source_vol/USER.2/FILE_5
```

扫描重复数据删除

使用 `-edupe` 参数 `scan` 命令以在报告中包含重复数据删除估计值。



Simple Storage Service (S3)不支持稀疏文件。因此、请将S3存储分段指定为的目标 `scan -edupe` 对于稀疏数据、返回值"None"。

语法

```
xcp scan -edupe <ip_address_or_hostname>:/source_vol
```

显示示例

```
root@localhost linux]# ./xcp scan -edupe <IP address or hostname of
NFSserver>:/source_vol

== Maximum Values ==
Size Used Depth Namelen Dirsize
1 KiB 4 KiB 2 11 9
== Average Values ==
Namelen Size Depth Dirsize
6 682 1 5
== Top Space Users ==
root
52 KiB
== Top File Owners ==
root
18
== Top File Extensions ==
.txt other
5 10
== Number of files ==
empty <8KiB 8-64KiB 64KiB-1MiB 1-10MiB 10-100MiB >100MiB
4 11
== Space used ==
empty <8KiB 8-64KiB 64KiB-1MiB 1-10MiB 10-100MiB >100MiB
40 KiB
== Directory entries ==
empty 1-10 10-100 100-1K 1K-10K >10K
3
== Depth ==
0-5 6-10 11-15 16-20 21-100 >100
18
== Accessed ==
>1 year >1 month 1-31 days 1-24 hrs <1 hour
4
<15 mins
11
future
== Modified ==
>1 year >1 month 1-31 days 1-24 hrs <1 hour <15 mins future
15
== Changed ==
>1 year >1 month 1-31 days 1-24 hrs <1 hour <15 mins future
15

Total count: 18
```

```
Directories: 3
Regular files: 15
Symbolic links: None
Special files: None
Hard links: None,
multilink files: None,
Space Saved by Hard links (KB): 0
Sparse data: None
Dedupe estimate: N/A
Total space for regular files: size: 10.0 KiB, used: 40 KiB
Total space for symlinks: size: 0, used: 0
Total space for directories: size: 12 KiB, used: 12 KiB
Total space used: 52 KiB
Xcp command : xcp scan -edupe <IP address or hostname of
NFSserver>:/source_vol
18 scanned, 0 matched, 0 error
Speed : 16.0 KiB in (52.7 KiB/s), 2.29 KiB out (7.52 KiB/s)
Total Time : 0s.
STATUS : PASSED
```

扫描-BS <n[k]>

使用 `-bs <n[k]>` 参数 `scan` 命令以指定读/写块大小。此适用场景会扫描使用读取数据的 `-md5` 或 `-edupe` parameters默认块大小为64k。

语法

```
xcp scan -bs <n[k]> <ip_address_or_hostname>:/source_vol
```

显示示例

```
[root@localhost linux]# ./xcp scan -bs 32 <IP address or hostname of
NFS server>:/source_vol

source_vol
source_vol/r1.txt
source_vol/USER.1
source_vol/USER.2
source_vol/USER.1/FILE_1
source_vol/USER.1/FILE_2
source_vol/USER.1/FILE_3
source_vol/USER.1/FILE_4
source_vol/USER.1/FILE_5
source_vol/USER.1/file1.txt
source_vol/USER.1/file2.txt
source_vol/USER.1/logfile.txt
source_vol/USER.1/log1.txt
source_vol/USER.2/FILE_1
source_vol/USER.2/FILE_5
source_vol/USER.2/FILE_2
source_vol/USER.2/FILE_3
source_vol/USER.2/FILE_4
Xcp command : xcp scan -bs 32 <IP address or hostname of
NFSserver>:/source_vol
18 scanned, 0 matched, 0 error
Speed : 4.59 KiB in (19.0 KiB/s), 756 out (3.06KiB/s)
Total Time : 0s.
STATUS : PASSED
```

扫描-并行<n>

使用 `-parallel` 参数 `scan` 命令以指定并发批处理进程的最大数量。默认值为7。

语法

```
xcp scan -parallel <n> <ip_address_or_hostname>:/source_vol
```

显示示例

```
[root@localhost linux]# ./xcp scan -parallel 5 <IP address or hostname
of NFS server>:/source_vol

source_vol
source_vol/USER.1/FILE_1
source_vol/USER.1/FILE_2
source_vol/USER.1/FILE_3
source_vol/USER.1/FILE_4
source_vol/USER.1/FILE_5
source_vol/USER.1/file1.txt
source_vol/USER.1/file2.txt
source_vol/USER.1/logfile.txt
source_vol/USER.1/log1.txt
source_vol/r1.txt
source_vol/USER.1
source_vol/USER.2
source_vol/USER.2/FILE_1
source_vol/USER.2/FILE_5
source_vol/USER.2/FILE_2
source_vol/USER.2/FILE_3
source_vol/USER.2/FILE_4
Xcp command : xcp scan -parallel 5 <IP address or hostname of NFS
server>:/source_vol
18 scanned, 0 matched, 0 error
Speed : 4.59 KiB in (7.36 KiB/s), 756 out (1.19 KiB/s)
Total Time : 0s.
STATUS : PASSED
```

扫描-**noId**

使用 `-noId` 参数 `scan` 命令以禁止创建默认索引。默认值为 `false`。

语法

```
xcp scan -noId <ip_address_or_hostname>:/source_vol
```


显示示例

```
[root@localhost linux]# ./xcp scan -noId <IP address or hostname of NFS
server>:/source_vol

source_vol
source_vol/USER.1/FILE_1
source_vol/USER.1/FILE_2
source_vol/USER.1/FILE_3
source_vol/USER.1/FILE_4
source_vol/USER.1/FILE_5
source_vol/USER.1/file1.txt
source_vol/USER.1/file2.txt
source_vol/USER.1/logfile.txt
source_vol/USER.1/log1.txt
source_vol/r1.txt
source_vol/USER.1
source_vol/USER.2
source_vol/USER.2/FILE_1
source_vol/USER.2/FILE_5
source_vol/USER.2/FILE_2
source_vol/USER.2/FILE_3
source_vol/USER.2/FILE_4
Xcp command : xcp scan -noId <IP address or hostname of
NFSserver>:/source_vol
18 scanned, 0 matched, 0 error
Speed : 4.59 KiB in (5.84 KiB/s), 756 out(963/s)
Total Time : 0s.
STATUS : PASSED
```

扫描"-subdir-names"

使用 `-subdir-names` 参数 `scan` 命令以检索目录中顶级子目录的名称。

语法

```
xcp scan -subdir-names <ip_address_or_hostname>:/source_vol
```

显示示例

```
[root@localhost linux]# ./xcp scan -subdir-names <IP address or
hostname of NFS server>:/source_vol

source_vol
Xcp command : xcp scan -subdir-names <IP address or hostname of NFS
server>:/source_vol
7 scanned, 0 matched, 0 error
Speed : 1.30 KiB in (1.21 KiB/s), 444 out(414/s)
Total Time : 1s.
STATUS : PASSED
```

扫描-保留-环境

使用 `-preserve-atime` 参数 `scan` 命令将源上的所有文件还原到上次访问的日期。

扫描NFS共享时、如果存储系统配置为修改读取时的访问时间、则会修改文件的访问时间。XCP不会直接更改访问时间。XCP逐个读取文件、这会触发访问时间更新。。 `-preserve-atime` 选项会将访问时间重置为执行XCP读取操作之前设置的原始值。

语法

```
xcp scan -preserve-atime <ip_address_or_hostname>:/source_vol
```

显示示例

```
[root@client 1 linux]# ./xcp scan -preserve-atime
101.10.10.10:/source_vol

xcp: Job ID: Job_2022-06-30_14.14.15.334173_scan
source_vol/USER2/DIR1_4/FILE_DIR1_4_1024_1
source_vol/USER2/DIR1_4/FILE_DIR1_4_13926_4
source_vol/USER2/DIR1_4/FILE_DIR1_4_65536_2
source_vol/USER2/DIR1_4/FILE_DIR1_4_7475_3
source_vol/USER2/DIR1_4/FILE_DIR1_4_20377_5
source_vol/USER2/DIR1_4/FILE_DIR1_4_26828_6
source_vol/USER2/DIR1_4/FILE_DIR1_4_33279_7
source_vol/USER2/DIR1_4/FILE_DIR1_4_39730_8
source_vol/USER1
source_vol/USER2
source_vol/USER1/FILE_USER1_1024_1
source_vol/USER1/FILE_USER1_65536_2
source_vol/USER1/FILE_USER1_7475_3
source_vol/USER1/FILE_USER1_13926_4
source_vol/USER1/FILE_USER1_20377_5
source_vol/USER1/FILE_USER1_26828_6
source_vol/USER1/FILE_USER1_33279_7
source_vol/USER1/FILE_USER1_39730_8
source_vol/USER1/DIR1_2
source_vol/USER1/DIR1_3
source_vol/USER2/FILE_USER2_1024_1
source_vol/USER2/FILE_USER2_65536_2
source_vol/USER2/FILE_USER2_7475_3
source_vol/USER2/FILE_USER2_13926_4
source_vol/USER2/FILE_USER2_20377_5
source_vol/USER2/FILE_USER2_26828_6
source_vol/USER2/FILE_USER2_33279_7
source_vol/USER2/FILE_USER2_39730_8
source_vol/USER2/DIR1_3
source_vol/USER2/DIR1_4
source_vol/USER1/DIR1_2/FILE_DIR1_2_1024_1
source_vol/USER1/DIR1_2/FILE_DIR1_2_7475_3
source_vol/USER1/DIR1_2/FILE_DIR1_2_33279_7
source_vol/USER1/DIR1_2/FILE_DIR1_2_26828_6
source_vol/USER1/DIR1_2/FILE_DIR1_2_65536_2
source_vol/USER1/DIR1_2/FILE_DIR1_2_39730_8
source_vol/USER1/DIR1_2/FILE_DIR1_2_13926_4
source_vol/USER1/DIR1_2/FILE_DIR1_2_20377_5
source_vol/USER1/DIR1_3/FILE_DIR1_3_1024_1
```

```
source_vol/USER1/DIR1_3/FILE_DIR1_3_7475_3
source_vol/USER1/DIR1_3/FILE_DIR1_3_65536_2
source_vol/USER1/DIR1_3/FILE_DIR1_3_13926_4
source_vol/USER1/DIR1_3/FILE_DIR1_3_20377_5
source_vol/USER1/DIR1_3/FILE_DIR1_3_26828_6
source_vol/USER1/DIR1_3/FILE_DIR1_3_33279_7
source_vol/USER1/DIR1_3/FILE_DIR1_3_39730_8
source_vol/USER2/DIR1_3/FILE_DIR1_3_1024_1
source_vol/USER2/DIR1_3/FILE_DIR1_3_65536_2
source_vol/USER2/DIR1_3/FILE_DIR1_3_7475_3
source_vol/USER2/DIR1_3/FILE_DIR1_3_13926_4
source_vol/USER2/DIR1_3/FILE_DIR1_3_20377_5
source_vol/USER2/DIR1_3/FILE_DIR1_3_26828_6
source_vol/USER2/DIR1_3/FILE_DIR1_3_33279_7
source_vol/USER2/DIR1_3/FILE_DIR1_3_39730_8
source_vol
Xcp command : xcp scan -preserve-atime 101.10.10.10:/source_vol
Stats : 55 scanned
Speed : 14.1 KiB in (21.2 KiB/s), 2.33 KiB out (3.51 KiB/s)
Total Time : 0s.
Job ID : Job_2022-06-30_14.14.15.334173_scan
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2022-06-
30_14.14.15.334173_scan.log
STATUS : PASSED
```

扫描-s3.insecure

使用 `-s3.insecure` 参数 `scan` 用于使用HTTP而非HTTPS进行S3存储分段通信的命令。

语法

```
xcp scan -s3.insecure s3://<bucket_name>
```

显示示例

```
[root@client1 linux]# ./xcp scan -s3.insecure s3://bucket1

Job ID: Job_2023-06-08_08.16.31.345201_scan
file5g_1
USER1/FILE_USER1_1024_1
USER1/FILE_USER1_1024_2
USER1/FILE_USER1_1024_3
USER1/FILE_USER1_1024_4
USER1/FILE_USER1_1024_5
Xcp command : xcp scan -s3.insecure s3:// -bucket1
Stats : 8 scanned, 6 s3.objects
Speed : 0 in (0/s), 0 out (0/s)
Total Time : 2s.
Job ID : Job_2023-06-08_08.16.31.345201_scan
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-06-08_08.16.31.345201_scan.log
STATUS : PASSED
```

扫描-S3.Endpoint <s3_endpoint_url>

使用 `-s3.endpoint <s3_endpoint_url>` 参数 `scan` 命令以使用指定的URL覆盖默认AWS端点URL以进行S3存储分段通信。

语法

```
xcp scan -s3.endpoint https://<endpoint_url>: s3://<bucket_name>
```

显示示例

```
[root@client1 linux]# ./xcp scan -s3.endpoint https://<endpoint_url>:
s3://xcp-testing

Job ID: Job_2023-06-13_11.23.06.029137_scan
aws_files/USER1/FILE_USER1_1024_1
aws_files/USER1/FILE_USER1_1024_2
aws_files/USER1/FILE_USER1_1024_3
aws_files/USER1/FILE_USER1_1024_4
aws_files/USER1/FILE_USER1_1024_5
Xcp command : xcp scan -s3.endpoint https://<endpoint_url>: s3://xcp-
testing
Stats : 8 scanned, 5 s3.objects
Speed : 0 in (0/s), 0 out (0/s)
Total Time : 0s.
Job ID : Job_2023-06-13_11.23.06.029137_scan
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-06-
13_11.23.06.029137_scan.log
STATUS : PASSED
```

扫描-s3.profile <name>

使用 s3.profile 参数 scan 命令以从AWS凭据文件指定用于S3存储分段通信的配置文件。

语法

```
xcp scan -s3.profile <name> -s3.endpoint https://<endpoint_url>:
s3://<bucket_name>
```

显示示例

```
[root@client1 linux]# ./xcp scan -s3.profile sg -s3.endpoint
https://<endpoint_url>:
s3://bucket1

Job ID: Job_2023-06-08_08.47.11.963479_scan
1 scanned, 0 in (0/s), 0 out (0/s), 5s
USER1/FILE_USER1_1024_1
USER1/FILE_USER1_1024_2
USER1/FILE_USER1_1024_3
USER1/FILE_USER1_1024_4
USER1/FILE_USER1_1024_5
Xcp command : xcp scan -s3.profile sg -s3.endpoint
https://<endpoint_url>: s3://bucket1
Stats : 7 scanned, 5 s3.objects
Speed : 0 in (0/s), 0 out (0/s)
Total Time : 6s.
Job ID : Job_2023-06-08_08.47.11.963479_scan
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-06-
08_08.47.11.963479_scan.log
STATUS : PASSED
[root@client1 linux]#
```

扫描-s3.noverify

使用 `-s3.noverify` 参数 `scan` 用于覆盖S3存储分段通信的SSL认证默认验证的命令。

语法

```
xcp scan -s3.noverify s3://<bucket_name>
```

显示示例

```
root@client1 linux]# ./xcp scan -s3.noverify s3:// bucket1

Job ID: Job_2023-06-13_11.00.59.742237_scan
aws_files/USER1/FILE_USER1_1024_1
aws_files/USER1/FILE_USER1_1024_2
aws_files/USER1/FILE_USER1_1024_3
aws_files/USER1/FILE_USER1_1024_4
aws_files/USER1/FILE_USER1_1024_5
Xcp command : xcp scan -s3.noverify s3://bucket1
Stats : 8 scanned, 5 s3.objects
Speed : 0 in (0/s), 0 out (0/s)
Total Time : 2s.
Job ID : Job_2023-06-13_11.00.59.742237_scan
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-06-
13_11.00.59.742237_scan.log
STATUS : PASSED
```

复制

XCP NFS copy 命令会扫描整个源目录结构并将其复制到目标NFSv3导出。

。copy 命令要求将源路径和目标路径作为变量。扫描和复制的文件、吞吐量、速度和已用时间详细信息将显示在复制操作结束时。



- 运行时日志文件位于中 /opt/NetApp/xFiles/xcp/xcp.log 此路径是可配置的。运行每个命令后、目录中会提供其他日志记录。
- 如果源系统为7-模式系统、则可以使用Snapshot副本作为源。例如：
<ip_address>:/vol/ex_s01/.snapshot/<snapshot_name>

语法

```
xcp copy <source_nfs_export_path> <destination_nfs_export_path>
```


显示示例

```
root@localhost linux]# ./xcp copy <IP address of NFS
server>:/source_vol < IP address of
destination NFS server>:/dest_vol

xcp: WARNING: No index name has been specified, creating one with name:
autoname_copy_2020-03-
03_23.46.33.153705
Xcp command : xcp copy <IP address of NFS server>:/source_vol <IP
address of destination NFS
server>:/dest_vol
18 scanned, 0 matched, 17 copied, 0 error
Speed : 38.9 KiB in (51.2 KiB/s), 81.2 KiB out (107KiB/s)
Total Time : 0s.
STATUS : PASSED
```

下表列出了 `copy` 参数及其问题描述。

参数	Description
<code>copy -nonames</code>	从文件列表和报告中排除用户和组名称。
<code><<copy_match,复制-匹配(); 过滤器();</code>	仅处理与筛选器匹配的文件和目录。
<code><<copy_md5,copy -md5</code>	在文件上生成校验和、并在编制索引时保存校验和(默认值: <code>false</code>)。
<code><<copy_dircount,copy -dircount (); n[k]</code>	指定读取目录时的请求大小。
<code>copy -edupe</code>	在报告中包括重复数据删除估计值。
<code><<copy_bs,copy -BS [k]</code>	指定读/写块大小(默认值: 64K)。
<code><<copy_parallel,复制-并行(); n</code>	指定并发批处理进程的最大数量(默认值: 7)。
<code>copy -날 들-地</code>	将源上的所有文件还原到上次访问的日期。
<code>复制-s3.insecure</code>	提供使用HTTP而非HTTPS进行S3存储分段通信的选项。
<code><<copy_s3_endpoint,copy -s3.endpoint s3_endpoint_url></code>	使用为S3存储分段通信指定的URL覆盖默认Amazon Web Services (AWS)端点URL。
<code><<copy_s3_profile,复制-s3.profile PROFILE名称></code>	从AWS凭据文件中指定用于S3存储分段通信的配置文件。
<code>复制-s3.noverify</code>	覆盖S3存储分段通信的SSL证书的默认验证。

`copy -nonames`

使用 `-nonames` 参数 `copy` 用于从文件列表或报告中排除用户和组名称的命令。

语法

```
xcp copy -nonames <source_ip_address_or_hostname>:/source_vol  
<destination_ip_address_or_hostname>:/dest_vol
```

显示示例

```
[root@localhost linux]# ./xcp copy -nonames <IP address or hostname of  
NFS server>:/source_vol <IP  
address of destination NFS server>:/dest_vol  
  
xcp: WARNING: No index name has been specified, creating one with name:  
autoname_copy_2020-03-  
03_23.48.48.147261  
Xcp command : xcp copy -nonames <IP address or hostname of NFS  
server>:/source_vol <IP address of  
destination NFS server>:/dest_vol  
18 scanned, 0 matched, 17 copied, 0 error  
Speed : 38.9 KiB in (53.5 KiB/s), 81.3 KiB out (112 KiB/s)  
Total Time : 0s.  
STATUS : PASSED
```

copy -match <filter>

使用 `-match <filter>` 参数 `copy` 命令以指定仅处理与筛选器匹配的文件和目录。

语法

```
xcp copy -match <filter> <source_ip_address_or_hostname>:/source_vol  
<destination_ip_address_or_hostname>:/dest_vol
```

显示示例

```
[root@localhost linux]# ./xcp copy -match bin <IP address or hostname
of NFS server>:/source_vol <IP
address of destination NFS server>:/dest_vol

xcp: WARNING: No index name has been specified, creating one with name:
autoname_copy_2020-03-
04_00.00.07.125990
Xcp command : xcp copy -match bin <IP address or hostname of NFS
server>:/source_vol <IP address
of destination NFS server>:/dest_vol
18 scanned, 18 matched, 17 copied, 0 error
Speed : 39.1 KiB in (52.6 KiB/s), 81.7 KiB out (110 KiB/s)
Total Time : 0s.
STATUS : PASSED
```

copy -MD5 <string_expression>

使用 `-md5` 参数 `copy` 命令为文件列表生成校验和并在编制索引时保存校验和。默认值设置为`false`。

语法

```
xcp copy -md5 <source_ip_address_or_hostname>:/source_vol
<destination_ip_address_or_hostname>:/dest_vol
```

显示示例

```
[root@localhost linux]# ./xcp copy -md5 <IP address or hostname of NFS
server>:/source_vol <IP
address of destination NFS server>:/dest_vol

xcp: WARNING: No index name has been specified, creating one with name:
autoname_copy_2020-03-
03_23.47.41.137615
Xcp command : xcp copy -md5 <IP address or hostname of NFS
server>:/source_vol <IP address of
destination NFS server>:/dest_vol
18 scanned, 0 matched, 17 copied, 0 error
Speed : 38.9 KiB in (52.1 KiB/s), 81.3 KiB out (109 KiB/s)
Total Time : 0s.
STATUS : PASSED
```

copy -dircount <n[k]>

使用 `-dircount <n[k]>` 参数 `copy` 命令以指定读取目录时的请求大小。默认值为64k。

语法

```
xcp copy -dircount <n[k]> <source_ip_address_or_hostname>:/source_vol  
<destination_ip_address_or_hostname>:/dest_vol
```

显示示例

```
[root@localhost linux]# ./xcp copy -dircount 32k <IP address or  
hostname of NFS server>:/source_vol  
<IP address of destination NFS server>:/dest_vol  
  
xcp: WARNING: No index name has been specified, creating one with name:  
autoname_copy_2020-03-  
03_23.58.01.094460  
Xcp command : xcp copy -dircount 32k <IP address or hostname of NFS  
server>:/source_vol <IP  
address of destination NFS server >:/dest_vol  
18 scanned, 0 matched, 17 copied, 0 error  
Speed : 39.1 KiB in (56.7 KiB/s), 81.6 KiB out (119 KiB/s)  
Total Time : 0s.  
STATUS : PASSED
```

copy -edupe

使用 `-edupe` 参数 `copy` 命令以在报告中包含重复数据删除估计值。



Simple Storage Service (S3)不支持稀疏文件。因此、请将S3存储分段指定为的目标 `copy -edupe` 对于稀疏数据、返回值"None"。

语法

```
xcp copy -edupe <source_ip_address_or_hostname>:/source_vol  
<destination_ip_address_or_hostname>:/dest_vol
```

显示示例

```
[root@localhost linux]# ./xcp copy -edupe <IP address or hostname of
NFS server>:/source_vol <IP
address of destination NFS server>:/dest_vol

xcp: WARNING: No index name has been specified, creating one with name:
autoname_copy_2020-03-
03_23.48.10.436325
== Maximum Values ==
Size Used Depth Namelen Dirsize
1 KiB 4 KiB 2 11 9
== Average Values ==
Namelen Size Depth Dirsize
6 682 1 5
== Top Space Users ==
root
52 KiB
== Top File Owners ==
root
18
== Top File Extensions ==
.txt other
5 10
== Number of files ==
empty <8KiB 8-64KiB 64KiB-1MiB 1-10MiB 10-100MiB >100MiB
4 11
== Space used ==
empty <8KiB 8-64KiB 64KiB-1MiB 1-10MiB 10-100MiB >100MiB
40 KiB
== Directory entries ==
empty 1-10
3
10-100 100-1K 1K-10K >10K
== Depth ==
0-5 6-10 11-15 16-20 21-100 >100
18
== Accessed ==
>1 year >1 month 1-31 days 1-24 hrs <1 hour <15 mins future
4 11
== Modified ==
>1 year >1 month 1-31 days 1-24 hrs <1 hour <15 mins future
10 5
== Changed ==
>1 year >1 month 1-31 days 1-24 hrs <1 hour <15 mins future
```

```
10 5
Total count: 18
Directories: 3
Regular files: 15
Symbolic links: None
Special files: None
Hard links: None,
multilink files: None,
Space Saved by Hard links (KB): 0
Sparse data: None
Dedupe estimate: N/A
Total space for regular files: size: 10.0 KiB, used: 40 KiB
Total space for symlinks: size: 0, used: 0
Total space for directories: size: 12 KiB, used: 12 KiB
Total space used: 52 KiB
Xcp command : xcp copy -edupe <IP address or hostname of NFS
server>:/source_vol <destination NFS
export path>:/dest_vol
18 scanned, 0 matched, 17 copied, 0 error
Speed : 38.9 KiB in (36.7 KiB/s), 81.3 KiB out (76.7 KiB/s)
Total Time : 1s.
STATUS : PASSED
```

copy -BS <n[k]>

使用 `-bs <n[k]>` 参数 `copy` 命令以指定读/写块大小。默认块大小为64k。

语法

```
xcp copy -bs <n[k]> <ip_address_or_hostname>:/source_vol
<destination_ip_address_or_hostname>:/dest_vol
```

显示示例

```
[root@localhost linux]# ./xcp copy -bs 32k <IP address or hostname of
NFS server>:/source_vol <IP
address of destination NFS server>:/dest_vol

xcp: WARNING: No index name has been specified, creating one with name:
autoname_copy_2020-03-
03_23.57.04.742145
Xcp command : xcp copy -bs 32k <IP address or hostname of NFS
server>:/source_vol <IP address of
destination NFS server>:/dest_vol
18 scanned, 0 matched, 17 copied, 0 error
Speed : 39.1 KiB in (115 KiB/s), 81.6 KiB out (241 KiB/s)
Total Time : 0s.
STATUS : PASSED
```

copy -par行并行<n>

使用 `-parallel <n>` 参数 `copy` 命令以指定并发批处理进程的最大数量。默认值为7。

语法

```
xcp copy -parallel <n> <ip_address_or_hostname>:/source_vol
destination_ip_address_or_hostname:/<dest_vol>
```

显示示例

```
[root@localhost linux]# ./xcp copy -parallel 4 <IP address or hostname
of NFS server>:/source_vol
<IP address of destination NFS server>:/dest_vol

xcp: WARNING: No index name has been specified, creating one with name:
autoname_copy_2020-03-
03_23.59.41.477783
Xcp command : xcp copy -parallel 4 <IP address or hostname of NFS
server>:/source_vol <IP address
of destination NFS server>:/dest_vol
18 scanned, 0 matched, 17 copied, 0 error
Speed : 39.1 KiB in (35.6 KiB/s), 81.6 KiB out (74.4 KiB/s)
Total Time : 1s.
STATUS : PASSED
```

copy -备份-地

使用 `-preserve-atime` 参数 `copy` 命令将源上的所有文件还原到上次访问的日期。

- 。 `-preserve-atime` 选项会将访问时间重置为执行XCP读取操作之前设置的原始值。

语法

```
xcp copy -preserve-atime <source_ip_address_or_hostname>:/source_vol
<destination_ip_address_or_hostname>:/dest_vol
```

显示示例

```
[root@client1 linux]# ./xcp copy -preserve-atime
101.10.10.10:/source_vol 10.102.102.10:/dest_vol

xcp: WARNING: No index name has been specified, creating one with name:
XCP_copy_2022-06-
30_14.22.53.742272
xcp: Job ID: Job_XCP_copy_2022-06-30_14.22.53.742272_2022-06-
30_14.22.53.742272_copy
Xcp command : xcp copy -preserve-atime 101.10.10.10:/source_vol
10.102.102.10:/dest_vol
Stats : 55 scanned, 54 copied, 55 indexed
Speed : 1.26 MiB in (852 KiB/s), 1.32 MiB out (896 KiB/s)
Total Time : 1s.
Migration ID: XCP_copy_2022-06-30_14.22.53.742272
Job ID : Job_XCP_copy_2022-06-30_14.22.53.742272_2022-06-
30_14.22.53.742272_copy
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_XCP_copy_2022-06-
30_14.22.53.742272_2022-06-
30_14.22.53.742272_copy.log
STATUS : PASSED
[root@client1 linux]#
```

复制-s3.insecure

使用 `-s3.insecure` 参数 `copy` 用于使用HTTP而非HTTPS进行S3存储分段通信的命令。

语法

```
xcp copy -s3.insecure s3://<bucket_name>
```


显示示例

```
[root@client1 linux]# ./xcp copy -s3.insecure hdfs:///user/test
s3://bucket1

xcp: WARNING: No index name has been specified, creating one with name:
XCP_copy_2023-06-
08_09.01.47.581599
Job ID: Job_XCP_copy_2023-06-08_09.01.47.581599_copy
Xcp command : xcp copy -s3.insecure hdfs:///user/test s3://bucket1
Stats : 8 scanned, 5 copied, 8 indexed, 5 KiB s3.data.uploaded, 5
s3.copied.single.key.file, 5 s3.copied.file
Speed : 6.78 KiB in (1.86 KiB/s), 83.3 KiB out (22.9 KiB/s)
Total Time : 3s.
Migration ID: XCP_copy_2023-06-08_09.01.47.581599
Job ID : Job_XCP_copy_2023-06-08_09.01.47.581599_copy
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_XCP_copy_2023-06-
08_09.01.47.581599_copy.log
STATUS : PASSED

[root@client1 linux]# ./xcp copy -s3.insecure hdfs:///user/demo
s3://bucket1

xcp: WARNING: No index name has been specified, creating one with name:
XCP_copy_2023-06-
08_09.15.58.807485
Job ID: Job_XCP_copy_2023-06-08_09.15.58.807485_copy
Xcp command : xcp copy -s3.insecure hdfs:///user/demo s3://bucket1
Stats : 8 scanned, 5 copied, 8 indexed, 5 KiB s3.data.uploaded, 5
s3.copied.single.key.file, 5 s3.copied.file
Speed : 10.4 KiB in (3.60 KiB/s), 85.3 KiB out (29.6 KiB/s)
Total Time : 2s.
Migration ID: XCP_copy_2023-06-08_09.15.58.807485
Job ID : Job_XCP_copy_2023-06-08_09.15.58.807485_copy
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_XCP_copy_2023-06-
08_09.15.58.807485_copy.log
STATUS : PASSED
```

copy -s3.Endpoint <s3_endpoint_url>

使用 `-s3.endpoint <s3_endpoint_url>` 参数 `copy` 命令以使用指定的URL覆盖默认AWS端点URL以进行S3存储分段通信。

语法

```
xcp copy -s3.endpoint https://<endpoint_url>: s3://<bucket_name>
```

显示示例

```
root@client1 linux]# ./xcp copy -s3.endpoint https://<endpoint_url>:
hdfs:///user/test
s3://xcp-testing

xcp: WARNING: No index name has been specified, creating one with name:
XCP_copy_2023-06-
13_11.20.32.571348
Job ID: Job_XCP_copy_2023-06-13_11.20.32.571348_copy
Xcp command : xcp copy -s3.endpoint https://<endpoint_url>
hdfs:///user/test s3://xcp-testing
Stats : 8 scanned, 5 copied, 8 indexed, 5 KiB s3.data.uploaded, 5
s3.copied.single.key.file, 5 s3.copied.file
Speed : 6.78 KiB in (1.77 KiB/s), 83.6 KiB out (21.8 KiB/s)
Total Time : 3s.
Migration ID: XCP_copy_2023-06-13_11.20.32.571348
Job ID : Job_XCP_copy_2023-06-13_11.20.32.571348_copy
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_XCP_copy_2023-06-
13_11.20.32.571348_copy.log
STATUS : PASSED
[root@client1 linux]# ./xcp copy -s3.endpoint https://<endpoint_url>:
hdfs:///user/demo
s3://xcp-testing

xcp: WARNING: No index name has been specified, creating one with name:
XCP_copy_2023-06-
13_11.40.26.913130
Job ID: Job_XCP_copy_2023-06-13_11.40.26.913130_copy
15,009 scanned, 1,462 copied, 9 indexed, 1.46 MiB s3.data.uploaded,
1,491
s3.copied.single.key.file, 1,491 s3.copied.file, 4.58 MiB in (933
KiB/s), 1.72 MiB out (350
KiB/s), 5s
15,009 scanned, 4,283 copied, 9 indexed, 4.20 MiB s3.data.uploaded,
4,302
s3.copied.single.key.file, 4,302 s3.copied.file, 7.70 MiB in (629
KiB/s), 4.85 MiB out (632
KiB/s), 10s
15,009 scanned, 7,323 copied, 9 indexed, 7.17 MiB s3.data.uploaded,
7,343
s3.copied.single.key.file, 7,343 s3.copied.file, 11.0 MiB in (672
KiB/s), 8.24 MiB out (681
KiB/s), 15s
15,009 scanned, 10,427 copied, 9 indexed, 10.2 MiB s3.data.uploaded,
10,439
```

```
s3.copied.single.key.file, 10,439 s3.copied.file, 14.5 MiB in (690
KiB/s), 11.7 MiB out (695
KiB/s), 20s
15,009 scanned, 13,445 copied, 9 indexed, 13.1 MiB s3.data.uploaded,
13,454
s3.copied.single.key.file, 13,454 s3.copied.file, 17.8 MiB in (676
KiB/s), 15.0 MiB out (682
KiB/s), 25s
Xcp command : xcp copy -s3.endpoint https://<endpoint_url>:
hdfs:///user/demo s3://xcp-testing
Stats : 15,009 scanned, 15,005 copied, 15,009 indexed, 14.7 MiB
s3.data.uploaded, 15,005
s3.copied.single.key.file, 15,005 s3.copied.file
Speed : 19.2 MiB in (712 KiB/s), 17.1 MiB out (635 KiB/s)
Total Time : 27s.
Migration ID: XCP_copy_2023-06-13_11.40.26.913130
Job ID : Job_XCP_copy_2023-06-13_11.40.26.913130_copy
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_XCP_copy_2023-06-
13_11.40.26.913130_copy.log
STATUS : PASSED
```

复制-s3.profile <name>

使用 s3.profile 参数 copy 命令以从AWS凭据文件指定用于S3存储分段通信的配置文件。

语法

```
xcp copy -s3.profile <name> -s3.endpoint https://<endpoint_url>:
s3://<bucket_name>
```

显示示例

```
root@client1 linux]# ./xcp copy -s3.endpoint https://<endpoint_url>:
hdfs:///user/test
s3://xcp-testing

xcp: WARNING: No index name has been specified, creating one with name:
XCP_copy_2023-06-
13_11.20.32.571348
Job ID: Job_XCP_copy_2023-06-13_11.20.32.571348_copy
Xcp command : xcp copy -s3.endpoint https://<endpoint_url>
hdfs:///user/test s3://xcp-testing
Stats : 8 scanned, 5 copied, 8 indexed, 5 KiB s3.data.uploaded, 5
s3.copied.single.key.file, 5 s3.copied.file
Speed : 6.78 KiB in (1.77 KiB/s), 83.6 KiB out (21.8 KiB/s)
Total Time : 3s.
Migration ID: XCP_copy_2023-06-13_11.20.32.571348
Job ID : Job_XCP_copy_2023-06-13_11.20.32.571348_copy
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_XCP_copy_2023-06-
13_11.20.32.571348_copy.log
STATUS : PASSED
[root@client1 linux]# ./xcp copy -s3.endpoint https://<endpoint_url>:
hdfs:///user/demo
s3://xcp-testing

xcp: WARNING: No index name has been specified, creating one with name:
XCP_copy_2023-06-
13_11.40.26.913130
Job ID: Job_XCP_copy_2023-06-13_11.40.26.913130_copy
15,009 scanned, 1,462 copied, 9 indexed, 1.46 MiB s3.data.uploaded,
1,491
s3.copied.single.key.file, 1,491 s3.copied.file, 4.58 MiB in (933
KiB/s), 1.72 MiB out (350
KiB/s), 5s
15,009 scanned, 4,283 copied, 9 indexed, 4.20 MiB s3.data.uploaded,
4,302
s3.copied.single.key.file, 4,302 s3.copied.file, 7.70 MiB in (629
KiB/s), 4.85 MiB out (632
KiB/s), 10s
15,009 scanned, 7,323 copied, 9 indexed, 7.17 MiB s3.data.uploaded,
7,343
s3.copied.single.key.file, 7,343 s3.copied.file, 11.0 MiB in (672
KiB/s), 8.24 MiB out (681
KiB/s), 15s
15,009 scanned, 10,427 copied, 9 indexed, 10.2 MiB s3.data.uploaded,
10,439
```

```
s3.copied.single.key.file, 10,439 s3.copied.file, 14.5 MiB in (690
KiB/s), 11.7 MiB out (695
KiB/s), 20s
15,009 scanned, 13,445 copied, 9 indexed, 13.1 MiB s3.data.uploaded,
13,454
s3.copied.single.key.file, 13,454 s3.copied.file, 17.8 MiB in (676
KiB/s), 15.0 MiB out (682
KiB/s), 25s
Xcp command : xcp copy -s3.endpoint https://<endpoint_url>:
hdfs:///user/demo s3://xcp-testing
Stats : 15,009 scanned, 15,005 copied, 15,009 indexed, 14.7 MiB
s3.data.uploaded, 15,005
s3.copied.single.key.file, 15,005 s3.copied.file
Speed : 19.2 MiB in (712 KiB/s), 17.1 MiB out (635 KiB/s)
Total Time : 27s.
Migration ID: XCP_copy_2023-06-13_11.40.26.913130
Job ID : Job_XCP_copy_2023-06-13_11.40.26.913130_copy
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_XCP_copy_2023-06-
13_11.40.26.913130_copy.log
STATUS : PASSED
```

复制-s3.noverify

使用 `-s3.noverify` 参数 `copy` 用于覆盖S3存储分段通信的SSL认证默认验证的命令。

语法

```
xcp copy -s3.noverify s3://<bucket_name>
```

显示示例

```
[root@client1 linux]# ./xcp copy -s3.noverify hdfs://user/test s3://
bucket1

xcp: WARNING: No index name has been specified, creating one with name:
XCP_copy_2023-06-
13_10.57.41.994969
Job ID: Job_XCP_copy_2023-06-13_10.57.41.994969_copy
Xcp command : xcp copy -s3.noverify hdfs://user/test s3://bucket1
Stats : 8 scanned, 5 copied, 8 indexed, 5 KiB s3.data.uploaded, 5
s3.copied.single.key.file, 5 s3.copied.file
Speed : 6.78 KiB in (2.36 KiB/s), 83.3 KiB out (29.0 KiB/s)
Total Time : 2s.
Migration ID: XCP_copy_2023-06-13_10.57.41.994969
Job ID : Job_XCP_copy_2023-06-13_10.57.41.994969_copy
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_XCP_copy_2023-06-
13_10.57.41.994969_copy.log
STATUS : PASSED
./xcp copy -s3.profile sg -s3.noverify -s3.endpoint
https://<endpoint_url>: hdfs:///user/demo s3://bucket1

xcp: WARNING: No index name has been specified, creating one with name:
XCP_copy_2023-06-
13_11.26.56.143287
Job ID: Job_XCP_copy_2023-06-13_11.26.56.143287_copy
1 scanned, 9.95 KiB in (1.99 KiB/s), 12.9 KiB out (2.58 KiB/s), 5s
15,009 scanned, 1,555 copied, 9 indexed, 1.54 MiB s3.data.uploaded,
1,572
s3.copied.single.key.file, 1,572 s3.copied.file, 4.68 MiB in (951
KiB/s), 1.81 MiB out (365
KiB/s), 10s
15,009 scanned, 4,546 copied, 9 indexed, 4.46 MiB s3.data.uploaded,
4,572
s3.copied.single.key.file, 4,572 s3.copied.file, 7.95 MiB in (660
KiB/s), 5.15 MiB out (674
KiB/s), 15s
15,009 scanned, 7,702 copied, 9 indexed, 7.53 MiB s3.data.uploaded,
7,710
s3.copied.single.key.file, 7,710 s3.copied.file, 11.5 MiB in (710
KiB/s), 8.65 MiB out (707
KiB/s), 20s
15,009 scanned, 10,653 copied, 9 indexed, 10.4 MiB s3.data.uploaded,
10,669
s3.copied.single.key.file, 10,669 s3.copied.file, 14.7 MiB in (661
KiB/s), 11.9 MiB out (670
```

```
KiB/s), 25s
15,009 scanned, 13,422 copied, 9 indexed, 13.1 MiB s3.data.uploaded,
13,428
s3.copied.single.key.file, 13,428 s3.copied.file, 17.8 MiB in (627
KiB/s), 15.0 MiB out (627
KiB/s), 30s
Xcp command : xcp copy -s3.profile sg -s3.noverify -s3.endpoint
https://<endpoint_url>: hdfs:///user/demo s3://bucket1
Stats : 15,009 scanned, 15,005 copied, 15,009 indexed, 14.7 MiB
s3.data.uploaded, 15,005
s3.copied.single.key.file, 15,005 s3.copied.file
Speed : 19.2 MiB in (609 KiB/s), 17.1 MiB out (543 KiB/s)
Total Time : 32s.
Migration ID: XCP_copy_2023-06-13_11.26.56.143287
Job ID : Job_XCP_copy_2023-06-13_11.26.56.143287_copy
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_XCP_copy_2023-06-
13_11.26.56.143287_copy.log
STATUS : PASSED
```

同步

查看XCP的说明、参数和示例 `sync` 命令、包括何时 `sync` 命令与结合使用 `dry run` 选项

同步

XCP NFS `sync` 命令会使用目录索引标记名称或上次复制操作的编号来扫描对源NFS目录所做的更改和修改。对源的增量更改将复制并应用于目标目录。同步操作完成后、旧目录索引编号将替换为新目录索引编号。



在同步操作期间、修改后的文件和目录会再次复制到目标NFSv3导出。

语法

```
xcp sync -id <catalog_name>
```



。 `-id <catalog_name>` 参数是必需的 `sync` 命令：

显示示例

```
[root@localhost linux]# ./xcp sync -id autoname_copy_2020-03-04_01.10.22.338436

xcp: Index: {source: <IP address or hostname of NFS server>:/source_vol, target: <IP address of destination NFS server>:/dest_vol}
Xcp command : xcp sync -id autoname_copy_2020-03-04_01.10.22.338436
0 scanned, 0 copied, 0 modification, 0 new item, 0 delete item, 0 error
Speed : 26.4 KiB in (27.6 KiB/s), 22.7 KiB out (23.7 KiB/s)
Total Time : 0s.
STATUS : PASSED
```

下表列出了 `sync` 参数及其问题描述。

参数	Description
<<sync_id,sync -id	指定上一个副本索引的目录名称。这是的必需参数 <code>sync</code> 命令:
sync -nonames	从文件列表和报告中排除用户和组名称。
<<sync_bs,sync -BS [k]	指定读/写块大小(默认值: 64K)。
<<sync_dircount,sync -dircount (); n[k]	指定读取目录时的请求大小。
<<sync_parallel,sync -并行()); n	指定并发批处理进程的最大数量(默认值: 7)。
sync -保留-环境	将源上的所有文件还原到上次访问的日期。

sync -nonames

使用 `-nonames` 参数 `sync` 用于从文件列表或报告中排除用户和组名称的命令。

语法

```
xcp sync -id <catalog_name> -nonames
```

显示示例

```
[root@localhost linux]# ./xcp sync -id ID001 -nonames

xcp: Index: {source: <IP address or hostname of NFS
server>:/source_vol, target: <IP address of
destination NFS server>:/dest_vol}
Xcp command : xcp sync -id ID001 -nonames
0 scanned, 0 copied, 0 modification, 0 new item, 0 delete item, 0 error
Speed : 26.4 KiB in (22.2 KiB/s), 22.3 KiB out (18.8 KiB/s)
Total Time : 1s.
STATUS : PASSED
```

Sync -BS <n[k]>

使用 `-bs <n[k]>` 参数 `sync` 命令以指定读/写块大小。默认块大小为64k。

语法

```
xcp sync -id <catalog_name> -bs <n[k]>
```

显示示例

```
[root@localhost linux]# ./xcp sync -id ID001 -bs 32k

xcp: Index: {source: <IP address or hostname of NFS
server>:/source_vol, target: <IP address of
destination NFS server>:/dest_vol}
Xcp command : xcp sync -id ID001 -bs 32k
0 scanned, 0 copied, 0 modification, 0 new item, 0 delete item, 0 error
Speed : 25.3 KiB in (20.4 KiB/s), 21.0 KiB out (16.9 KiB/s)
Total Time : 1s.
STATUS : PASSED
```

sync -dircount <n[k]>

使用 `-dircount <n[k]>` 参数 `sync` 命令以指定读取目录时的请求大小。默认值为64k。

语法

```
xcp sync -id <catalog_name> -dircount <n[k]>
```

显示示例

```
[root@localhost linux]# ./xcp sync -id ID001 -dircount 32k

xcp: Index: {source: <IP address or hostname of NFS
server>:/source_vol, target: <IP address of
destination NFS server>:/dest_vol}
Xcp command : xcp sync -id ID001 -dircount 32k
0 scanned, 0 copied, 0 modification, 0 new item, 0 delete item, 0 error
Speed : 25.3 KiB in (27.8 KiB/s), 21.0 KiB out (23.0 KiB/s)
Total Time : 0s.
STATUS : PASSED
```

sync -par 并联

使用 `-parallel` 参数 `sync` 命令以指定并发批处理进程的最大数量。默认值为7。

语法

```
xcp sync -id <catalog_name> -parallel <n>
```

显示示例

```
[root@localhost linux]# ./xcp sync -id ID001 -parallel 4

xcp: Index: {source: <IP address or hostname of NFS
server>:/source_vol, target: <IP address of
destination NFS server>:/dest_vol}
Xcp command : xcp sync -id ID001 -parallel 4
0 scanned, 0 copied, 0 modification, 0 new item, 0 delete item, 0 error
Speed : 25.3 KiB in (20.6 KiB/s), 21.0 KiB out (17.1 KiB/s)
Total Time : 1s.
STATUS : PASSED
```

-re 日期

使用 `-preserve-atime` 参数 `sync` 命令将源上的所有文件还原到上次访问的日期。

。 `-preserve-atime` 选项会将访问时间重置为执行XCP读取操作之前设置的原始值。

语法

```
xcp sync -preserve-atime -id <catalog_name>
```

显示示例

```
[root@client-1 linux]# ./xcp sync -preserve-atime -id XCP_copy_2022-06-30_14.22.53.742272

xcp: Job ID: Job_XCP_copy_2022-06-30_14.22.53.742272_2022-06-30_14.27.28.660165_sync
xcp: Index: {source: 101.10.10.10:/source_vol, target: 10.201.201.20:/dest_vol}
xcp: diff 'XCP_copy_2022-06-30_14.22.53.742272': 55 reviewed, 55 checked at source, 1 modification, 54 reindexed, 23.3 KiB in (15.7 KiB/s), 25.1 KiB out (16.9 KiB/s), 1s.
xcp: sync 'XCP_copy_2022-06-30_14.22.53.742272': Starting search pass for 1 modified directory...
xcp: find changes: 55 reviewed, 55 checked at source, 1 modification, 55 re-reviewed, 54 reindexed, 28.0 KiB in (18.4 KiB/s), 25.3 KiB out (16.6 KiB/s), 1s.
xcp: sync phase 2: Rereading the 1 modified directory...
xcp: sync phase 2: 55 reviewed, 55 checked at source, 1 modification, 55 re-reviewed, 1 new dir, 54 reindexed, 29.2 KiB in (19.0 KiB/s), 25.6 KiB out (16.7 KiB/s), 1s.
xcp: sync 'XCP_copy_2022-06-30_14.22.53.742272': Deep scanning the 1 modified directory...
xcp: sync 'XCP_copy_2022-06-30_14.22.53.742272': 58 scanned, 55 copied, 56 indexed, 55 reviewed, 55 checked at source, 1 modification, 55 re-reviewed, 1 new dir, 54 reindexed, 1.28 MiB in (739 KiB/s), 1.27 MiB out (732 KiB/s), 1s.
Xcp command : xcp sync -preserve-atime -id XCP_copy_2022-06-30_14.22.53.742272
Stats : 58 scanned, 55 copied, 56 indexed, 55 reviewed, 55 checked at source, 1 modification, 55 re-reviewed, 1 new dir, 54 reindexed
Speed : 1.29 MiB in (718 KiB/s), 1.35 MiB out (755 KiB/s)
Total Time : 1s.
Migration ID: XCP_copy_2022-06-30_14.22.53.742272
Job ID : Job_XCP_copy_2022-06-30_14.22.53.742272_2022-06-30_14.27.28.660165_sync
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_XCP_copy_2022-06-30_14.22.53.742272_2022-06-30_14.27.28.660165_sync.log
STATUS : PASSED
```

同步演练

。 `sync` 命令 `dry-run option` 将使用复制操作的先前目录索引编号查找对源NFS目录所做的更改或修改。此命令还会检测自上次复制操作以来新增、移动、删除或重命名的文件和目录。命令可报告源更改、但不会将其应用于目标。

语法

```
xcp sync dry-run -id <catalog_name>
```



。 `-id <catalog_name>` 参数是必需的 `sync dry-run` 命令选项。

显示示例

```
[root@localhost linux]# ./xcp sync dry-run -id ID001

xcp: Index: {source: <IP address or hostname of NFS
server>:/source_vol, target: <IP address of
destination NFS server>:/dest_vol}
Xcp command : xcp sync dry-run -id ID001
0 matched, 0 error
Speed : 15.2 KiB in (46.5 KiB/s), 5.48 KiB out (16.7 KiB/s)
Total Time : 0s.
STATUS : PASSED
```

下表列出了 `sync dry-run` 参数及其问题描述。

参数	Description
<<sync_dry_run_id, sync演练-id	指定上一个副本索引的目录名称。这是的必需参数 <code>sync</code> 命令：
同步演练-stats.	对修改后的目录执行深度扫描、并报告所有内容新增。
sync演习-l	打印有关已更改的文件和目录的详细信息。
sync dry-run -nonames	从文件列表和报告中排除用户和组名称。
<<sync_dry_run_dircount, sync演习-dircount (); n[k]	指定读取目录时的请求大小。
<<sync_dry_run_parallel, 同步试运行-并行(); n	指定并发批处理进程的最大数量(默认值: 7)。

sync dry-run -id <catalog_name>

使用 `-id <catalog_name>` 带的参数 `sync dry-run` 指定上一个副本索引的目录名称。



。 `-id <catalog_name>` 参数是必需的 `sync dry-run` 命令选项。

语法

```
xcp sync dry-run -id <catalog_name>
```

显示示例

```
[root@localhost linux]# ./xcp sync dry-run -id ID001

xcp: Index: {source: <IP address or hostname of NFS
server>:/source_vol, target: <IP address of
destination NFS server>:/dest_vol}
Xcp command : xcp sync dry-run -id ID001
0 matched, 0 error
Speed : 15.2 KiB in (21.7 KiB/s), 5.48 KiB out (7.81 KiB/s)
Total Time : 0s.
STATUS : PASSED
```

同步演练-**stats**.

使用 `-stats` 带的参数 `sync dry-run` 对修改后的目录执行深度扫描并报告所有新增内容。

语法

```
xcp sync dry-run -id <catalog_name> -stats
```

显示示例

```
[root@localhost linux]# ./xcp sync dry-run -id ID001 -stats

xcp: Index: {source: <IP address or hostname of NFS
server>:/source_vol, target: <IP address of
destination NFS server>:/dest_vol}
4,895 reviewed, 43,163 checked at source, 12.8 MiB in (2.54 MiB/s),
5.49 MiB out (1.09 MiB/s),
5s
4,895 reviewed, 101,396 checked at source, 19.2 MiB in (1.29 MiB/s),
12.8 MiB out (1.47 MiB/s),
10s
Xcp command : xcp sync dry-run -id ID001 -stats
0 matched, 0 error
Speed : 22.9 MiB in (1.74 MiB/s), 17.0 MiB out (1.29 MiB/s)
Total Time : 13s.
STATUS : PASSED
```

sync 演习-I

使用 `-l` 带的参数 `sync dry-run` 可打印有关已更改的文件和目录的详细信息。

语法

```
xcp sync dry-run -id <catalog_name> -l
```

显示示例

```
[root@localhost linux]# ./xcp sync dry-run -id ID001 -l

xcp: Index: {source: <IP address or hostname of NFS
server>:/source_vol, target: <IP address of
destination NFS server>:/dest_vol}
Xcp command : xcp sync dry-run -id ID001 -l
0 matched, 0 error
Speed : 15.2 KiB in (13.6 KiB/s), 5.48 KiB out (4.88 KiB/s)
Total Time : 1s.
STATUS : PASSED
```


sync dry-run -nonames

使用 `-nonames` 带的参数 `sync dry-run` 从文件列表或报告中排除用户和组名称。

语法

```
xcp sync dry-run -id <catalog_name> -nonames
```

显示示例

```
[root@localhost linux]# ./xcp sync dry-run -id ID001 -nonames

xcp: Index: {source: <IP address or hostname of NFS
server>:/source_vol, target: <IP address of
destination NFS server>:/dest_vol}
Xcp command : xcp sync dry-run -id ID001 -nonames
0 matched, 0 error
Speed : 15.2 KiB in (15.8 KiB/s), 5.48 KiB out (5.70 KiB/s)
Total Time : 0s.
STATUS : PASSED
```

sync dry-run -dircount <n[k]>

使用 `-dircount <n[k]>` 带的参数 `sync dry-run` 指定读取目录时的请求大小。默认值为64k。

语法

```
xcp sync dry-run -id <catalog_name> -dircount <n[k]>
```

显示示例

```
[root@localhost linux]# ./xcp sync dry-run -id ID001 -dircount 32k

xcp: Index: {source: <IP address or hostname of NFS
server>:/source_vol, target: <IP address of
destination NFS server>:/dest_vol}
Xcp command : xcp sync dry-run -id ID001 -dircount 32k
0 matched, 0 error
Speed : 15.2 KiB in (32.5 KiB/s), 5.48 KiB out (11.7 KiB/s)
Total Time : 0s.
STATUS : PASSED
```

sync 演习-并行

使用 `-parallel` 带的参数 `sync dry-run` 指定并发批处理的最大数量。默认值为7。

语法

```
xcp sync dry-run -id <catalog_name> -parallel <n>
```

显示示例

```
[root@localhost linux]# ./xcp sync dry-run -id ID001 -parallel 4

xcp: Index: {source: <IP address or hostname of NFS
server>:/source_vol, target: <IP address of
destination NFS server>:/dest_vol}
Xcp command : xcp sync dry-run -id ID001 -parallel 4
0 matched, 0 error
Speed : 15.2 KiB in (25.4 KiB/s), 5.48 KiB out (9.13 KiB/s)
Total Time : 0s.
STATUS : PASSED
```

恢复

XCP NFS `resume` 命令通过指定目录索引名称或编号来重新启动中断的复制操作。上一个复制操作的目录索引名称或编号位于中 `<catalog path>:/catalog/indexes` 目录。

语法

```
xcp resume -id <catalog_name>
```



。 `-id <catalog_name>` 参数是必需的 `resume` 命令：

```
[root@localhost linux]# ./xcp resume -id ID001

xcp: Index: {source: <IP address or hostname of NFS
server>:/source_vol, target: <IP address of
destination NFS server>:/dest_vol}
xcp: resume 'ID001': Reviewing the incomplete index...
xcp: diff 'ID001': Found 652 completed directories and 31 in progress
4,658 reviewed, 362 KiB in (258 KiB/s), 7.66 KiB out (5.46 KiB/s), 1s.
xcp: resume 'ID001': Starting second pass for the in-progress
directories...
xcp: resume 'ID001': Resuming the in-progress directories...
xcp: resume 'ID001': Resumed command: copy {-newid: u'ID001'}
xcp: resume 'ID001': Current options: {-id: 'ID001'}
xcp: resume 'ID001': Merged options: {-id: 'ID001', -newid: u'ID001'}
xcp: resume 'ID001': Values marked with a * include operations before
resume
28,866
MiB/s),
scanned*,
5s 9,565 copied*, 4,658 indexed*, 108 MiB in (21.6 MiB/s), 100.0 MiB
out (20.0
44,761
MiB/s),
44,761
scanned*,
11s
scanned*,
16,440
20,795
copied*,
copied*,
4,658 indexed*, 206 MiB in (19.3 MiB/s), 191 MiB out (17.9
4,658 indexed*, 362 MiB in (31.3 MiB/s), 345 MiB out (30.8
MiB/s),
44,761
16s
scanned*, 25,985 copied*, 4,658 indexed*, 488 MiB in (25.2 MiB/s), 465
MiB out (24.0
MiB/s),
44,761
21s
scanned*, 31,044 copied*, 4,658 indexed*, 578 MiB in (17.9 MiB/s), 558
MiB out (18.6
```

MiB/s),
54,838
26s
scanned*, 36,980 copied*, 14,276 indexed*, 679 MiB in (20.2 MiB/s), 657
MiB out (19.8
MiB/s),
67,123
31s
scanned*, 42,485 copied*, 29,160 indexed*, 742 MiB in (12.5 MiB/s), 720
MiB out (12.4
MiB/s),
79,681
36s
scanned*, 49,863 copied*, 39,227 indexed*, 801 MiB in (11.8 MiB/s), 779
MiB out (11.7
MiB/s),
79,681
41s
scanned*, 56,273 copied*, 39,227 indexed*, 854 MiB in (10.6 MiB/s), 832
MiB out (10.6
MiB/s),
79,681
46s
scanned*, 62,593 copied*, 39,227 indexed*, 906 MiB in (10.2 MiB/s), 881
MiB out (9.70
MiB/s),
84,577
51s
scanned*, 68,000 copied*, 44,047 indexed*, 976 MiB in (14.0 MiB/s), 951
MiB out (14.1
MiB/s),
86,737
56s
scanned*, 72,738 copied*, 49,071 indexed*, 1.04 GiB in (17.8 MiB/s),
1.01 GiB out (17.5
MiB/s),
89,690
1m1s
scanned*, 77,440 copied*, 54,110 indexed*, 1.14 GiB in (20.5 MiB/s),
1.11 GiB out (20.1
MiB/s), 1m6s
110,311 scanned*, 84,497 copied*, 74,158 indexed*, 1.24 GiB in (20.3
MiB/s), 1.21 GiB out (20.4
MiB/s), 1m11s
114,726 scanned*, 91,285 copied*, 74,158 indexed*, 1.33 GiB in (17.9
MiB/s), 1.30 GiB out (17.6

```

MiB/s), 1m16s
114,726 scanned*, 97,016 copied*, 74,158 indexed*, 1.46 GiB in (26.6
MiB/s), 1.43 GiB out (26.6
MiB/s), 1m21s
118,743 scanned*, 100,577 copied*, 79,331 indexed*, 1.65 GiB in (40.1
MiB/s), 1.62 GiB out (39.3
MiB/s), 1m26s
122,180 scanned*, 106,572 copied*, 84,217 indexed*, 1.77 GiB in (24.7
MiB/s), 1.74 GiB out (25.0
MiB/s), 1m31s
124,724 scanned*, 111,727 copied*, 84,217 indexed*, 1.89 GiB in (22.8
MiB/s), 1.86 GiB out (22.5
MiB/s), 1m36s
128,268 scanned*, 114,686 copied*, 99,203 indexed*, 1.99 GiB in (21.1
MiB/s), 1.96 GiB out (21.2
MiB/s), 1m41s
134,630 scanned*, 118,217 copied*, 104,317 indexed*, 2.06 GiB in (13.8
MiB/s), 2.03 GiB out
(13.7 MiB/s), 1m46s
134,630 scanned*, 121,742 copied*, 109,417 indexed*, 2.10 GiB in (9.02
MiB/s), 2.07 GiB out
(9.30 MiB/s), 1m51s
134,630 scanned*, 126,057 copied*, 109,417 indexed*, 2.20 GiB in (21.0
MiB/s), 2.17 GiB out
(21.0 MiB/s), 1m56s
134,630 scanned*, 130,034 copied*, 114,312 indexed*, 2.36 GiB in (32.1
MiB/s), 2.33 GiBout
(31.8 MiB/s), 2m1s
Xcp command : xcp resume -id ID001
134,630 scanned*, 134,630 copied*, 0 modification, 0 new item, 0 delete
item, 0 error
Speed : 2.40 GiB in (19.7 MiB/s), 2.37 GiB out (19.5 MiB/s)
Total Time : 2m4s.
STATUS : PASSED

```

下表列出了 `resume` 参数及其问题描述。

参数	Description
<<resume_id,恢复-id	指定上一个副本索引的目录名称。这是reume命令的必需参数。
<<resume_bs,恢复-BS [k]	指定读/写块大小(默认值: 64K)。
<<resume_dircount,resume -dircount (); n[k]	指定读取目录时的请求大小。
<<resume_parallel,恢复-并行(); n	指定并发批处理进程的最大数量(默认值: 7)。

参数	Description
<code>Resume -locale-存储</code>	将源上的所有文件还原到上次访问的日期。
<code>恢复-s3.insecure</code>	提供使用HTTP而非HTTPS进行S3存储分段通信的选项。
<code><<resume_s3_endpoint,恢复-s3.endpoint</code>	使用为S3存储分段通信指定的URL覆盖默认Amazon Web Services (AWS)端点URL。
<code><<resume_s3_profile,恢复-s3.profile (); pro_name</code>	从AWS凭据文件中指定用于S3存储分段通信的配置文件。
<code>恢复-s3.noverify</code>	覆盖S3存储分段通信的SSL证书的默认验证。

恢复-BS <n[k]>

使用 `-bs <n[k]>` 参数 `resume` 命令以指定读/写块大小。默认块大小为64k。

语法

```
xcp resume -id <catalog_name> -bs <n[k]>
```

显示示例

```
[root@localhost linux]# ./xcp resume -id ID001 -bs 32k

xcp: Index: {source: <IP address or hostname of NFS
server>:/source_vol, target: <IP address of
destination NFS server>:/dest_vol}
xcp: resume 'ID001': Reviewing the incomplete index...
xcp: diff 'ID001': Found 2,360 completed directories and 152 in
progress
19,440 reviewed, 1.28 MiB in (898 KiB/s), 9.77 KiB out (6.71 KiB/s),
1s.
xcp: resume 'ID001': Starting second pass for the in-progress
directories...
xcp: resume 'ID001': Resuming the in-progress directories...
xcp: resume 'ID001': Resumed command: copy {-newid: u'ID001'}
xcp: resume 'ID001': Current options: {-bs: '32k', -id: 'ID001'}
xcp: resume 'ID001': Merged options: {-bs: '32k', -id: 'ID001', -newid:
u'ID001'}
xcp: resume 'ID001': Values marked with a * include operations before
resume
44,242
MiB/s),
scanned*,
5s 24,132 copied*, 19,440 indexed*, 36.7 MiB in (7.34 MiB/s), 30.6 MiB
out (6.12
59,558
MiB/s),
59,558
scanned*,
10s
scanned*,
30,698
35,234
copied*,
copied*,
19,440
19,440
indexed*,
indexed*,
142
203
MiB
MiB
in
```

```
in
(20.9 MiB/s), 125
(12.1 MiB/s), 187
MiB
MiB
out
out
(18.8
(12.2
MiB/s),
59,558
15s
scanned*, 40,813 copied*, 19,440 indexed*, 286 MiB in (16.5 MiB/s), 269
MiB out (16.5
MiB/s),
65,126
20s
scanned*, 46,317 copied*, 24,106 indexed*, 401 MiB in (22.9 MiB/s), 382
MiB out (22.5
MiB/s),
69,214
25s
scanned*, 53,034 copied*, 29,031 indexed*, 496 MiB in (19.0 MiB/s), 476
MiB out (18.7
MiB/s),
85,438
30s
scanned*, 60,627 copied*, 53,819 indexed*, 591 MiB in (18.9 MiB/s), 569
MiB out (18.5
MiB/s),
94,647
35s
scanned*, 66,948 copied*, 53,819 indexed*, 700 MiB in (21.6 MiB/s), 679
MiB out (21.9
MiB/s),
94,647
40s
scanned*, 73,632 copied*, 53,819 indexed*, 783 MiB in (16.5 MiB/s), 761
MiB out (16.4
MiB/s),
99,683
45s
scanned*, 80,541 copied*, 58,962 indexed*, 849 MiB in (13.0 MiB/s), 824
MiB out (12.4
MiB/s), 50s
99,683
```



```

MiB/s),
scanned*,
55s
84,911 copied*, 58,962 indexed*, 1013 MiB in (32.8 MiB/s), 991 MiB out
(33.2
101,667 scanned*, 91,386 copied*, 73,849 indexed*, 1.06 GiB in (15.4
MiB/s), 1.04 GiB out (15.4
MiB/s), 1m0s
118,251 scanned*, 98,413 copied*, 89,168 indexed*, 1.13 GiB in (14.0
MiB/s), 1.11 GiB out (13.3
MiB/s), 1m5s
124,672 scanned*, 104,134 copied*, 89,168 indexed*, 1.25 GiB in (23.9
MiB/s), 1.22 GiB out (23.2
MiB/s), 1m10s
130,171 scanned*, 109,594 copied*, 94,016 indexed*, 1.38 GiB in (25.7
MiB/s), 1.35 GiB out (25.5
MiB/s), 1m15s
134,574 scanned*, 113,798 copied*, 94,016 indexed*, 1.52 GiB in (28.6
MiB/s), 1.48 GiB out (28.2
MiB/s), 1m20s
134,574 scanned*, 118,078 copied*, 94,016 indexed*, 1.64 GiB in (24.6
MiB/s), 1.61 GiB out (25.1
MiB/s), 1m25s
134,574 scanned*, 121,502 copied*, 94,016 indexed*, 1.80 GiB in (34.0
MiB/s), 1.77 GiB out (33.0
MiB/s), 1m30s
134,630 scanned*, 126,147 copied*, 104,150 indexed*, 1.88 GiB in (16.2
MiB/s), 1.86 GiB out
(17.5 MiB/s), 1m35s
134,630 scanned*, 131,830 copied*, 119,455 indexed*, 1.95 GiB in (13.6
MiB/s), 1.92 GiB out
(13.5 MiB/s), 1m41s
Xcp command : xcp resume -id ID001 -bs 32k
134,630 scanned*, 134,630 copied*, 0 modification, 0 new item, 0 delete
item, 0 error
Speed : 2.02 GiB in (19.9 MiB/s), 1.99 GiB out (19.7 MiB/s)
Total Time : 1m43s.
STATUS : PASSED

```

Resume -dircount <n[k]>

使用 `-dircount <n[k]>` 参数 `resume` 命令以指定读取目录时的请求大小。默认值为64k。

语法

```
xcp resume -id <catalog_name> -dircount <n[k]>
```

```
root@localhost linux]# ./xcp resume -id ID001 -dircount 32k

xcp: Index: {source: <IP address or hostname of NFS
server>:/source_vol, target: <IP address of
destination NFS server>:/dest_vol}
xcp: resume 'ID001': Reviewing the incomplete index...
xcp: diff 'ID001': Found 4,582 completed directories and 238 in
progress
39,520 reviewed, 2.47 MiB in (1.49 MiB/s), 12.6 KiB out (7.62 KiB/s),
1s.
xcp: resume 'ID001': Starting second pass for the in-progress
directories...
xcp: resume 'ID001': Resuming the in-progress directories...
xcp: resume 'ID001': Resumed command: copy {-newid: u'ID001'}
xcp: resume 'ID001': Current options: {-dircount: '32k', -id: 'ID001'}
xcp: resume 'ID001': Merged options: {-dircount: '32k', -id: 'ID001',
-newid: u'ID001'}
xcp: resume 'ID001': Values marked with a * include operations before
resume
76,626 scanned*, 43,825 copied*, 39,520 indexed*, 31.7 MiB in (6.33
MiB/s), 23.0 MiB out (4.60
MiB/s), 5s
79,751 scanned*, 49,942 copied*, 39,520 indexed*, 140 MiB in (21.7
MiB/s), 131 MiB out (21.5
MiB/s), 10s
79,751 scanned*, 55,901 copied*, 39,520 indexed*, 234 MiB in (18.8
MiB/s), 223 MiB out (18.3
MiB/s), 15s
79,751 scanned*, 61,764 copied*, 39,520 indexed*, 325 MiB in (18.0
MiB/s), 313 MiB out (17.9
MiB/s), 20s
84,791 scanned*, 68,129 copied*, 44,510 indexed*, 397 MiB in (14.3
MiB/s), 384 MiB out (14.2
MiB/s), 25s
94,698 scanned*, 74,741 copied*, 54,039 indexed*, 485 MiB in (17.4
MiB/s), 473 MiB out (17.8
MiB/s), 30s
99,734 scanned*, 80,110 copied*, 59,044 indexed*, 605 MiB in (24.1
MiB/s), 591 MiB out (23.7
MiB/s), 35s
104,773 scanned*, 86,288 copied*, 69,005 indexed*, 716 MiB in (22.2
MiB/s), 703 MiB out (22.3
MiB/s), 40s
```

```
110,076 scanned*, 93,265 copied*, 79,102 indexed*, 795 MiB in (15.8
MiB/s), 781 MiB out (15.5
MiB/s), 45s
121,341 scanned*, 100,077 copied*, 84,096 indexed*, 897 MiB in (20.4
MiB/s), 881 MiB out (19.9
MiB/s), 50s
125,032 scanned*, 105,712 copied*, 89,132 indexed*, 1003 MiB in (21.2
MiB/s), 985 MiB out (20.7
MiB/s), 55s
129,548 scanned*, 110,382 copied*, 89,132 indexed*, 1.14 GiB in (32.0
MiB/s), 1.12 GiB out (32.1
MiB/s), 1m0s
131,976 scanned*, 115,158 copied*, 94,221 indexed*, 1.23 GiB in (19.2
MiB/s), 1.21 GiB out (18.3
MiB/s), 1m5s
134,430 scanned*, 119,161 copied*, 94,221 indexed*, 1.37 GiB in (27.8
MiB/s), 1.35 GiB out (28.3
MiB/s), 1m10s
134,630 scanned*, 125,013 copied*, 109,402 indexed*, 1.47 GiB in (21.2
MiB/s), 1.45 GiB out
(21.4 MiB/s), 1m15s
134,630 scanned*, 129,301 copied*, 114,532 indexed*, 1.61 GiB in (29.4
MiB/s), 1.60 GiB out
(29.8 MiB/s), 1m20s
134,630 scanned*, 132,546 copied*, 124,445 indexed*, 1.69 GiB in (14.8
MiB/s), 1.67 GiB out
(15.0 MiB/s), 1m25s
Xcp command : xcp resume -id ID001 -dircount 32k
134,630 scanned*, 134,630 copied*, 0 modification, 0 new item, 0 delete
item, 0 error
Speed : 1.70 GiB in (19.7 MiB/s), 1.69 GiB out (19.5 MiB/s)
Total Time : 1m28s.
STATUS : PASSED
```

Resume -par并口<n>

使用 - parallel <n> 参数 resume 命令以指定并发批处理进程的最大数量。默认值为7。

语法

```
xcp resume -id <catalog_name> -parallel <n>
```

```
[root@localhost linux]# ./xcp resume -id ID001 -parallel 3

xcp: Index: {source: <IP address or hostname of NFS
server>:/source_vol, target: <IP address of
destination NFS server>:/dest_vol}
xcp: resume 'ID001': Reviewing the incomplete index...
xcp: diff 'ID001': Found 2,347 completed directories and 149 in
progress
19,399 reviewed, 1.28 MiB in (659 KiB/s), 9.77 KiB out (4.93 KiB/s),
1s.
xcp: resume 'ID001': Starting second pass for the in-progress
directories...
xcp: resume 'ID001': Resuming the in-progress directories...
xcp: resume 'ID001': Resumed command: copy {-newid: u'ID001'}
xcp: resume 'ID001': Current options: {-id: 'ID001', -parallel: 3}
xcp: resume 'ID001': Merged options: {-id: 'ID001', -newid: u'ID001',
-parallel: 3}
xcp: resume 'ID001': Values marked with a * include operations before
resume
39,610 scanned*, 23,642 copied*, 19,399 indexed*, 56.3 MiB in (11.2
MiB/s), 45.8 MiB out (9.15
MiB/s), 5s
39,610 scanned*, 28,980 copied*, 19,399 indexed*, 145 MiB in (17.6
MiB/s), 134 MiB out (17.6
MiB/s), 10s
48,111 scanned*, 34,782 copied*, 34,042 indexed*, 223 MiB in (15.8
MiB/s), 212 MiB out (15.7
MiB/s), 15s
55,412 scanned*, 40,468 copied*, 34,042 indexed*, 317 MiB in (18.4
MiB/s), 304 MiB out (18.1
MiB/s), 21s
59,639 scanned*, 46,980 copied*, 39,032 indexed*, 390 MiB in (14.6
MiB/s), 377 MiB out (14.5
MiB/s), 26s
69,520 scanned*, 55,251 copied*, 49,006 indexed*, 438 MiB in (9.59
MiB/s), 423 MiB out (9.21
MiB/s), 31s
78,596 scanned*, 62,054 copied*, 59,001 indexed*, 492 MiB in (10.7
MiB/s), 476 MiB out (10.6
MiB/s), 36s
79,673 scanned*, 68,163 copied*, 59,001 indexed*, 610 MiB in (23.5
MiB/s), 593 MiB out (23.5
MiB/s), 41s
```

```
84,600 scanned*, 74,238 copied*, 64,150 indexed*, 723 MiB in (22.5
MiB/s), 705 MiB out (22.3
MiB/s), 46s
94,525 scanned*, 80,754 copied*, 74,157 indexed*, 807 MiB in (16.7
MiB/s), 788 MiB out (16.4
MiB/s), 51s
94,525 scanned*, 85,119 copied*, 74,157 indexed*, 1007 MiB in (39.9
MiB/s), 988 MiB out (39.9
MiB/s), 56s
09,514 scanned*, 93,474 copied*, 89,192 indexed*, 1.08 GiB in (20.7
MiB/s), 1.06 GiB out (20.2
MiB/s), 1m1s
111,953 scanned*, 100,639 copied*, 94,248 indexed*, 1.18 GiB in (19.3
MiB/s), 1.16 GiB out (19.2
MiB/s), 1m6s
114,605 scanned*, 105,958 copied*, 94,248 indexed*, 1.36 GiB in (36.8
MiB/s), 1.34 GiB out (36.6
MiB/s), 1m11s
124,531 scanned*, 112,340 copied*, 104,275 indexed*, 1.51 GiB in (29.8
MiB/s), 1.48 GiB out
(29.4 MiB/s), 1m16s
129,694 scanned*, 117,218 copied*, 109,236 indexed*, 1.67 GiB in (33.2
MiB/s), 1.65 GiB out
(33.1 MiB/s), 1m21s
131,753 scanned*, 123,850 copied*, 114,358 indexed*, 1.80 GiB in (25.9
MiB/s), 1.77 GiB out
(25.9 MiB/s), 1m26s
134,630 scanned*, 130,829 copied*, 124,437 indexed*, 1.85 GiB in (11.2
MiB/s), 1.83 GiB out
(11.2 MiB/s), 1m31s
Xcp command : xcp resume -id ID001 -parallel 3
134,630 scanned*, 134,630 copied*, 0 modification, 0 new item, 0 delete
item, 0 error
Speed : 2.02 GiB in (21.6 MiB/s), 2.00 GiB out (21.3 MiB/s)
Total Time : 1m35s.
STATUS : PASSED
```

Resume -locale-存储备

使用 `-preserve-atime` 参数 `resume` 命令将源上的所有文件还原到上次访问的日期。

- 。 `-preserve-atime` 参数用于将访问时间重置为执行XCP读取操作之前设置的原始值。

语法

```
xcp resume -id <catalog_name> -preserve-atime
```

显示示例

```
root@client1 linux]# ./xcp resume -preserve-atime -id XCP_copy_2022-06-30_14.22.53.742272

xcp: Job ID: Job_XCP_copy_2022-06-30_14.22.53.742272_2022-06-30_14.37.07.746208_resume
xcp: Index: {source: 101.10.10.12:/source_vol, target: 10.102.102.70:/dest_vol}
xcp: Tune: Previous operation on id 'XCP_copy_2022-06-30_14.22.53.742272' already completed;
nothing to resume
0 in (0/s), 0 out (0/s), 6s
Xcp command : xcp resume -preserve-atime -id XCP_copy_2022-06-30_14.22.53.742272
Stats :
Speed : 0 in (0/s), 0 out (0/s)
Total Time : 6s.
Migration ID: XCP_copy_2022-06-30_14.22.53.742272
Job ID : Job_XCP_copy_2022-06-30_14.22.53.742272_2022-06-30_14.37.07.746208_resume
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_XCP_copy_2022-06-30_14.22.53.742272_2022-06-30_14.37.07.746208_resume.log
STATUS : PASSED
```

恢复-s3.insecure

使用 `-s3.insecure` 参数 `resume` 用于使用HTTP而非HTTPS进行S3存储分段通信的命令。



如果 `-s3.insecure` 参数与一起使用 `copy` 命令、则会在恢复时忽略该命令。您必须指定 `-s3.insecure` 再次使用选项恢复。

语法

```
xcp resume -s3.insecure -id <catalog_name>
```

显示示例

```
root@client1 linux]# ./xcp resume -s3.insecure -id XCP_copy_2023-06-08_10.31.47.381883

Job ID: Job_XCP_copy_2023-06-08_10.31.47.381883_2023-06-08_10.34.02.964143_resume
Index: {source: 1 hdfs:///user/demo, target: s3://bucket1/}
Reviewing the incomplete index...
Found 0 completed directories and 2 in progress
4,009 reviewed, 88.7 KiB in (76.1 KiB/s), 332 out (285/s), 1s.
4,009 reviewed, 90.9 KiB in (77.6 KiB/s), 2.44 KiB out (2.08 KiB/s), 1s.
Starting second pass for the in-progress directories...
4,009 reviewed, 4,009 re-reviewed, 179 KiB in (130 KiB/s), 2.72 KiB out (1.98 KiB/s), 1s.
9,008 scanned*, 4,540 copied*, 4,009 indexed*, 534 KiB
s3.data.uploaded, 534
s3.copied.single.key.file, 534 s3.copied.file, 2.28 MiB in (464 KiB/s), 631 KiB out (126 KiB/s), 5s
9,008 scanned*, 5,551 copied*, 4,009 indexed*, 1.51 MiB
s3.data.uploaded, 1,544
s3.copied.single.key.file, 1,544 s3.copied.file, 3.38 MiB in (222 KiB/s), 1.74 MiB out (226 KiB/s), 10s
9,008 scanned*, 6,596 copied*, 4,009 indexed*, 2.53 MiB
s3.data.uploaded, 2,595
s3.copied.single.key.file, 2,595 s3.copied.file, 4.55 MiB in (235 KiB/s), 2.91 MiB out (236 KiB/s), 15s
9,008 scanned*, 7,658 copied*, 4,009 indexed*, 3.57 MiB
s3.data.uploaded, 3,652
s3.copied.single.key.file, 3,652 s3.copied.file, 5.71 MiB in (234 KiB/s), 4.09 MiB out (238 KiB/s), 20s
9,008 scanned*, 8,711 copied*, 4,009 indexed*, 4.60 MiB
s3.data.uploaded, 4,706
s3.copied.single.key.file, 4,706 s3.copied.file, 6.88 MiB in (235 KiB/s), 5.26 MiB out (236 KiB/s), 25s
Xcp command : xcp resume -s3.insecure -id XCP_copy_2023-06-08_10.31.47.381883
Stats : 9,008 scanned*, 9,006 copied*, 9,009 indexed*, 4.88 MiB
s3.data.uploaded, 4,996
```



```
s3.copied.single.key.file, 4,996 s3.copied.file
Speed : 7.10 MiB in (270 KiB/s), 5.76 MiB out (219 KiB/s)
Total Time : 26s.
Migration ID: XCP_copy_2023-06-08_10.31.47.381883
Job ID : Job_XCP_copy_2023-06-08_10.31.47.381883_2023-06-
08_10.34.02.964143_resume
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_XCP_copy_2023-06-
08_10.31.47.381883_2023-06-
08_10.34.02.964143_resume.log
STATUS : PASSED
```

恢复-s3.Endpoint <s3_endpoint_url>

使用 `-s3.endpoint <s3_endpoint_url>` 参数 `resume` 命令以使用为S3存储分段通信指定的URL覆盖默认AWS端点URL。



默认情况下、恢复会使用复制操作期间指定的S3配置文件和S3端点。但是、如果在恢复时指定新的S3端点和S3配置文件、则会覆盖与一起使用的默认设置 `copy` 命令：

语法

```
xcp resume -s3.profile <profile_name> -s3.endpoint https://<endpoint_url>:
-id <catalog_name>
```

显示示例

```
[root@client1 linux]# ./xcp resume -id XCP_copy_2023-06-13_11.48.59.454327

Job ID: Job_XCP_copy_2023-06-13_11.48.59.454327_2023-06-13_11.49.34.887164_resume
Index: {source: hdfs:///user/demo, target: s3://xcp-testing/}
Reviewing the incomplete index...
Found 0 completed directories and 2 in progress
9 reviewed, 4.53 KiB in (2.47 KiB/s), 188 out (102/s), 1s.
9 reviewed, 6.81 KiB in (3.70 KiB/s), 2.30 KiB out (1.25 KiB/s), 1s.
Starting second pass for the in-progress directories...
9 reviewed, 9 re-reviewed, 10.9 KiB in (5.65 KiB/s), 2.44 KiB out (1.26 KiB/s), 1s.
15,008 scanned*, 1,532 copied*, 9 indexed*, 1.50 MiB s3.data.uploaded, 1,539 s3.copied.single.key.file, 1,539 s3.copied.file, 4.64 MiB in (946 KiB/s), 1.77 MiB out (360 KiB/s), 6s
15,008 scanned*, 4,764 copied*, 9 indexed*, 4.67 MiB s3.data.uploaded, 4,784 s3.copied.single.key.file, 4,784 s3.copied.file, 8.21 MiB in (727 KiB/s), 5.38 MiB out (736 KiB/s), 11s
15,008 scanned*, 7,928 copied*, 9 indexed*, 7.75 MiB s3.data.uploaded, 7,935 s3.copied.single.key.file, 7,935 s3.copied.file, 11.7 MiB in (703 KiB/s), 8.89 MiB out (708 KiB/s), 16s
15,008 scanned*, 10,863 copied*, 9 indexed*, 10.6 MiB s3.data.uploaded, 10,864 s3.copied.single.key.file, 10,864 s3.copied.file, 14.9 MiB in (660 KiB/s), 12.2 MiB out (664 KiB/s), 21s
15,008 scanned*, 14,060 copied*, 9 indexed*, 13.7 MiB s3.data.uploaded, 14,076 s3.copied.single.key.file, 14,076 s3.copied.file, 18.5 MiB in (716 KiB/s), 15.7 MiB out (725 KiB/s), 26s
Xcp command : xcp resume -id XCP_copy_2023-06-13_11.48.59.454327
Stats : 15,008 scanned*, 15,006 copied*, 15,009 indexed*, 14.6 MiB s3.data.uploaded,
```

```
14,996 s3.copied.single.key.file, 14,996 s3.copied.file
Speed : 19.2 MiB in (708 KiB/s), 17.1 MiB out (631 KiB/s)
Total Time : 27s.
Migration ID: XCP_copy_2023-06-13_11.48.59.454327
Job ID : Job_XCP_copy_2023-06-13_11.48.59.454327_2023-06-
13_11.49.34.887164_resume
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_XCP_copy_2023-06-
13_11.48.59.454327_2023-06-
13_11.49.34.887164_resume.log
STATUS : PASSED
```

恢复s3.profile <profile_name>

使用 `-s3.profile <profile_name>` 参数 `resume` 命令以从AWS凭据文件指定用于S3存储分段通信的配置文件。



默认情况下、恢复会使用复制操作期间指定的S3配置文件和S3端点。但是、如果在恢复时指定新的S3端点和S3配置文件、则会覆盖与一起使用的默认设置 `copy` 命令：

语法

```
xcp resume -s3.profile <name> -s3.endpoint -id <catalog_name>
```

显示示例

```
[root@client1 linux]# ./xcp resume -s3.profile sg -s3.endpoint
https://<endpoint_url>: -id
XCP_copy_2023-06-08_10.40.42.519258

Job ID: Job_XCP_copy_2023-06-08_10.40.42.519258_2023-06-
08_10.52.18.453982_resume
Index: {source: hdfs:///user/demo target: s3://xxx-bucket/
Reviewing the incomplete index...
Found 0 completed directories and 2 in progress
9 reviewed, 4.53 KiB in (3.03 KiB/s), 188 out (126/s), 1s.
9 reviewed, 6.81 KiB in (4.52 KiB/s), 2.30 KiB out (1.53 KiB/s), 1s.
Starting second pass for the in-progress directories...
9 reviewed, 9 re-reviewed, 10.9 KiB in (6.76 KiB/s), 2.44 KiB out (1.51
KiB/s), 1s.
15,008 scanned*, 1,660 copied*, 9 indexed*, 1.64 MiB s3.data.uploaded,
1,675
s3.copied.single.key.file, 1,675 s3.copied.file, 4.75 MiB in (971
KiB/s), 1.92 MiB out (392
KiB/s), 5s
15,008 scanned*, 3,453 copied*, 9 indexed*, 3.39 MiB s3.data.uploaded,
3,467
s3.copied.single.key.file, 3,467 s3.copied.file, 6.79 MiB in (412
KiB/s), 3.91 MiB out (403
KiB/s), 10s
15,008 scanned*, 6,296 copied*, 9 indexed*, 6.16 MiB s3.data.uploaded,
6,305
s3.copied.single.key.file, 6,305 s3.copied.file, 9.86 MiB in (619
KiB/s), 7.08 MiB out (637
KiB/s), 15s
15,008 scanned*, 9,527 copied*, 9 indexed*, 9.33 MiB s3.data.uploaded,
9,554
s3.copied.single.key.file, 9,554 s3.copied.file, 13.4 MiB in (717
KiB/s), 10.7 MiB out (726
KiB/s), 20s
15,008 scanned*, 12,656 copied*, 9 indexed*, 12.4 MiB s3.data.uploaded,
12,648
s3.copied.single.key.file, 12,648 s3.copied.file, 16.9 MiB in (715
KiB/s), 14.1 MiB out (706
KiB/s), 25s
Xcp command : xcp resume -s3.profile sg -s3.endpoint
https://<endpoint_url>: -id XCP_copy_2023-
06-08_10.40.42.519258
Stats : 15,008 scanned*, 15,006 copied*, 15,009 indexed*, 14.6 MiB
```

```
s3.data.uploaded,  
14,996 s3.copied.single.key.file, 14,996 s3.copied.file  
Speed : 19.2 MiB in (661 KiB/s), 17.1 MiB out (590 KiB/s)  
Total Time : 29s.  
Migration ID: XCP_copy_2023-06-08_10.40.42.519258  
Job ID : Job_XCP_copy_2023-06-08_10.40.42.519258_2023-06-  
08_10.52.18.453982_resume  
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_XCP_copy_2023-06-  
08_10.40.42.519258_2023-06-  
08_10.52.18.453982_resume.log  
STATUS : PASSED
```

恢复-s3.noverify

使用 `-s3.noverify` 参数 `resume` 用于覆盖S3存储分段通信的SSL认证默认验证的命令。

语法

```
xcp resume -s3.noverify -id <catalog_name>
```

显示示例

```
[root@client1 linux]# ./xcp resume -s3.noverify -id XCP_copy_2023-06-13_11.32.47.743708

Job ID: Job_XCP_copy_2023-06-13_11.32.47.743708_2023-06-13_11.33.41.388541_resume
Index: {source: hdfs:///user/demo, target: s3://bucket/}
Reviewing the incomplete index...
Found 0 completed directories and 2 in progress
9 reviewed, 4.53 KiB in (3.70 KiB/s), 188 out (153/s), 1s.
9 reviewed, 6.81 KiB in (5.52 KiB/s), 2.30 KiB out (1.87 KiB/s), 1s.
Starting second pass for the in-progress directories...
9 reviewed, 9 re-reviewed, 10.9 KiB in (8.19 KiB/s), 2.44 KiB out (1.83 KiB/s), 1s.
15,008 scanned*, 1,643 copied*, 9 indexed*, 1.62 MiB s3.data.uploaded, 1,662 s3.copied.single.key.file, 1,662 s3.copied.file, 4.78 MiB in (969 KiB/s), 1.90 MiB out (385 KiB/s), 5s
15,008 scanned*, 4,897 copied*, 9 indexed*, 4.78 MiB s3.data.uploaded, 4,892 s3.copied.single.key.file, 4,892 s3.copied.file, 8.38 MiB in (735 KiB/s), 5.50 MiB out (737 KiB/s), 10s
15,008 scanned*, 8,034 copied*, 9 indexed*, 7.86 MiB s3.data.uploaded, 8,048 s3.copied.single.key.file, 8,048 s3.copied.file, 11.8 MiB in (696 KiB/s), 9.02 MiB out (708 KiB/s), 15s
15,008 scanned*, 11,243 copied*, 9 indexed*, 11.0 MiB s3.data.uploaded, 11,258 s3.copied.single.key.file, 11,258 s3.copied.file, 15.3 MiB in (709 KiB/s), 12.6 MiB out (724 KiB/s), 20s
15,008 scanned*, 14,185 copied*, 9 indexed*, 13.9 MiB s3.data.uploaded, 14,195 s3.copied.single.key.file, 14,195 s3.copied.file, 18.6 MiB in (662 KiB/s), 15.9 MiB out (660 KiB/s), 25s
Xcp command : xcp resume -s3.noverify -id XCP_copy_2023-06-13_11.32.47.743708
Stats : 15,008 scanned*, 15,006 copied*, 15,009 indexed*, 14.6 MiB s3.data.uploaded, 14,996 s3.copied.single.key.file, 14,996 s3.copied.file
```

```
Speed : 19.2 MiB in (736 KiB/s), 17.1 MiB out (657 KiB/s)
Total Time : 26s.
Migration ID: XCP_copy_2023-06-13_11.32.47.743708
Job ID : Job_XCP_copy_2023-06-13_11.32.47.743708_2023-06-
13_11.33.41.388541_resume
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_XCP_copy_2023-06-
13_11.32.47.743708_2023-06-
13_11.33.41.388541_resume.log
STATUS : PASSED
```

验证

。 `verify` 命令会在执行复制操作后在源目录和目标目录之间逐字节进行完整数据比较、而不使用目录索引编号。命令将检查修改时间以及其他文件或目录属性，包括权限。该命令还会读取两端的文件并比较数据。

语法

```
xcp verify <source NFS export path> <destination NFS exportpath>
```

显示示例

```
[root@localhost linux]# ./xcp verify <IP address of NFS
server>:/source_vol <IP address of destination NFS server>:/dest_vol

xcp: WARNING: No index name has been specified, creating one with name:
autoname_verify_2020-03-
04_23.54.40.893449
32,493 scanned, 11,303 found, 7,100 compared, 7,100 same data, 374 MiB
in (74.7 MiB/s), 4.74 MiB
out (971 KiB/s), 5s
40,109 scanned, 24,208 found, 18,866 compared, 18,866 same data, 834
MiB in (91.5 MiB/s), 10.5
MiB out (1.14 MiB/s), 10s
56,030 scanned, 14,623 indexed, 33,338 found, 27,624 compared, 27,624
same data, 1.31 GiB in
(101 MiB/s), 15.9 MiB out (1.07 MiB/s), 15s
73,938 scanned, 34,717 indexed, 45,583 found, 38,909 compared, 38,909
same data, 1.73 GiB in
(86.3 MiB/s), 22.8 MiB out (1.38 MiB/s), 20s
76,308 scanned, 39,719 indexed, 61,810 found, 54,885 compared, 54,885
same data, 2.04 GiB in
(62.8 MiB/s), 30.2 MiB out (1.48 MiB/s), 25s
103,852 scanned, 64,606 indexed, 77,823 found, 68,301 compared, 68,301
same data, 2.31 GiB in
(56.0 MiB/s), 38.2 MiB out (1.60 MiB/s), 30s
110,047 scanned, 69,579 indexed, 89,082 found, 78,794 compared, 78,794
same data, 2.73 GiB in
(85.6 MiB/s), 43.6 MiB out (1.06 MiB/s), 35s
113,871 scanned, 79,650 indexed, 99,657 found, 89,093 compared, 89,093
same data, 3.23 GiB in
(103 MiB/s), 49.3 MiB out (1.14 MiB/s), 40s
125,092 scanned, 94,616 indexed, 110,406 found, 98,369 compared, 98,369
same data, 3.74 GiB in
(103 MiB/s), 55.0 MiB out (1.15 MiB/s), 45s
134,630 scanned, 104,764 indexed, 120,506 found, 106,732 compared,
106,732 same data, 4.23 GiB
in (99.9 MiB/s), 60.4 MiB out (1.05 MiB/s), 50s
134,630 scanned, 114,823 indexed, 129,832 found, 116,198 compared,
116,198 same data, 4.71 GiB
in (97.2 MiB/s), 65.5 MiB out (1.04 MiB/s), 55s
Xcp command : xcp verify <IP address of NFS server>:/source_vol <IP
address of destination NFS
server>:/dest_vol
134,630 scanned, 0 matched, 100% found (121,150 have data), 100%
```



```
verified (data, attrs, mods), 0
different item, 0 error
Speed : 4.95 GiB in (86.4 MiB/s), 69.2 MiB out (1.18 MiB/s)
Total Time : 58s.
STATUS : PASSED
```

下表列出了 `verify` 参数及其问题描述。

参数	Description
验证-stats.	并行扫描源树和目标树并比较树统计信息。
验证-csv	并行扫描源树和目标树并比较树统计信息。
验证-nobdata	不检查数据。
验证-noatts	不检查属性。
验证-nomods	不检查文件修改时间。
<<nfs_verify_mtimewindow,验证- mtiewindow (); s	指定可接受的修改时间差以进行验证。
验证-v	检索输出格式以列出发现的任何差异。
验证-l	检索输出格式以列出发现的任何差异。
验证-nonames	从文件列表或报告中排除用户和组名称。
<<nfs_verify_match,验证- 匹配过滤器	仅处理与格式匹配的文件和目录。
<<nfs_verify_bs,验证- BS [k]	指定读/写块大小(默认值: 64K)。
<<nfs_verify_parallel,验证- 并行() ; n	指定并发批处理进程的最大数量(默认值: 7)。
<<nfs_verify_dircount,验证- dircount [k]	指定读取目录时的请求大小。
验证-nold	禁止创建默认索引(默认值: false)。
验证-保留-数据	将源上的所有文件还原到上次访问的日期。
验证-s3.insecure	提供使用HTTP而非HTTPS进行S3存储分段通信的选项。
<<nfs_verify_s3_endpoint,验证- s3.endpoint	使用为S3存储分段通信指定的URL覆盖默认Amazon Web Services (AWS)端点URL。
<<nfs_verify_s3_profile,验证- s3.profile () ; pro_name	从AWS凭据文件中指定用于S3存储分段通信的配置文件。
验证-s3.noverify	覆盖S3存储分段通信的SSL证书的默认验证。

验证-[statS](#)和验证-[csv](#)

使用 `-stats` 和 `-csv` 参数 `verify` 命令以并行扫描源树和目标树并比较树统计信息。

语法

```
cp verify -stats <source_ip_address>:/source_vol  
<destination_ip_address>:/dest_vol
```

显示示例

```
[root@localhost linux]# ./xcp verify -stats
<source_ip_address>:/source_vol <destination_ip_address>:/dest_vol

228,609 scanned, 49.7 MiB in (9.93 MiB/s), 3.06 MiB out (625 KiB/s), 5s
== Number of files ==
empty <8KiB 8-64KiB 64KiB-1MiB 1-10MiB 10-100MiB >100MiB
235 73,916 43,070 4,020 129 15
same same same same same same
== Directory entries ==
empty 1-10 10-100 100-1K 1K-10K >10K
3
same
10,300
same
2,727
same
67
same
11
same
== Depth ==
0-5 6-10 11-15 16-20 21-100 >100
47,120
same
79,772
same
7,608
same
130
same
== Modified ==
>1 year >1 month 1-31 days 1-24 hrs <1 hour <15 mins future
15
same 116,121
same 5,249
same
Total count: 134,630 / same
Directories: 13,108 / same
Regular files: 121,385 / same
Symbolic links: 137 / same
Special files: None / same
Hard links: None / same, Multilink files: None / same
Xcp command : xcp verify -stats <source_ip_address>:/source_vol
```

```
<<destination_ip_address>:/dest_vol  
269,260 scanned, 0 matched, 0 error  
Speed : 59.5 MiB in (7.44 MiB/s), 3.94 MiB out (506 KiB/s)  
Total Time : 7s.  
STATUS : PASSED
```

语法

```
xcp verify -csv <source_ip_address>:/source_vol  
<destination_ip_address>:/dest_vol
```

显示示例

```
[root@localhost linux]# ./xcp verify -csv
<source_ip_address>:/source_vol <destination_ip_address>:/dest_vol

222,028 scanned, 48.2 MiB in (9.63 MiB/s), 2.95 MiB out (603 KiB/s), 5s
== Number of files ==
empty
235
same    <8KiB 73,916
same    8-64KiB
43,070
same    64KiB-1MiB
4,020
same    1-10MiB
129
same    10-100MiB  >100MiB
15
same
== Directory entries ==
empty   1-10    10-100  100-1K  1K-10K  >10K
3
same    10,300
same    2,727
same    67
same    11
same
== Depth ==
0-5
6-10
11-15
16-20
21-100
>100
47,120
same    79,772
same    7,608
same    130
same
== Modified ==
>1 year  >1 month
1-31 days
1-24 hrs
<1 hour
<15 mins
```

```
future
```

```
15
```

```
same 121,370
```

```
same
```

```
Total count: 134,630 / same Directories: 13,108 / same Regular files:
121,385 / same Symbolic links: 137 / same Special files: None / same
Hard links: None / same, Multilink files: None / same
```

```
Xcp command : xcp verify -csv <source_ip_address>:/source_vol
<destination_ip_address>:/dest_vol
```

```
269,260 scanned, 0 matched, 0 error
```

```
Speed : 59.5 MiB in (7.53 MiB/s), 3.94 MiB out (512 KiB/s) Total Time
: 7s.
```

```
STATUS : PASSED
```

语法

```
xcp verify -stats -csv <source_ip_address>:/source_vol
<destination_ip_address>:/dest_vol
```

显示示例

```
[root@localhost linux]# ./xcp verify -stats -csv <IP address of source
NFS server>:/source_vol <IP
address of destination NFS server>:/dest_vol

224,618 scanned, 48.7 MiB in (9.54 MiB/s), 2.98 MiB out (597 KiB/s), 5s
== Number of files ==
empty <8KiB 8-64KiB 64KiB-1MiB 1-10MiB 10-100MiB >100MiB
235 73,916 43,070 4,020 129 15
same same same same same same
== Directory entries ==
empty 1-10 10-100 100-1K 1K-10K >10K
3
same
10,300
same
2,727
same
67
same
11
same
== Depth ==
0-5 6-10 11-15 16-20 21-100 >100
47,120
same
79,772
same
7,608
same
130
same
== Modified ==
>1 year >1 month 1-31 days 1-24 hrs <1 hour <15 mins future
15
same 121,370
same
Total count: 134,630 / same
Directories: 13,108 / same
Regular files: 121,385 / same
Symbolic links: 137 / same
Special files: None / same
Hard links: None / same, Multilink files: None / same
Xcp command : xcp verify -stats -csv <IP address of source NFS
```

```
server>:/source_vol <IP
address of destination NFS server>:/dest_vol
269,260 scanned, 0 matched, 0 error
Speed : 59.5 MiB in (7.49 MiB/s), 3.94 MiB out (509 KiB/s)
Total Time : 7s.
STATUS : PASSED
```

验证-nobdata

使用 `-nobdata` 参数 `verify` 用于指定不检查数据的命令。

语法

```
xcp verify -nobdata <source_ip_address>:/source_vol
<destination_ip_address>:/dest_vol
```

显示示例

```
[root@localhost linux]# ./xcp verify -nobdata <IP address of source NFS
server>:/source_vol <IP address of destination NFS server>:/dest_vol

xcp: WARNING: No index name has been specified, creating one with name:
autoname_verify_2020-03-
05_02.18.01.159115
70,052 scanned, 29,795 indexed, 43,246 found, 25.8 MiB in (5.14 MiB/s),
9.39 MiB out
(1.87 MiB/s), 5s
117,136 scanned, 94,723 indexed, 101,434 found, 50.3 MiB in (4.90
MiB/s), 22.4 MiB out (2.60
MiB/s), 10s
Xcp command : xcp verify -nobdata <IP address of source NFS
server>:/source_vol <IP address of
destination NFS server>:/dest_vol
134,630 scanned, 0 matched, 100% found (121,150 have data), 100%
verified (attrs, mods), 0
different item, 0 error
Speed : 62.7 MiB in (4.65 MiB/s), 30.2 MiB out (2.24MiB/s)
Total Time : 13s.
STATUS : PASSED
```

验证-noatts

使用 `-noattrs` 参数 `verify` 用于指定不检查属性的命令。

语法

```
xcp verify -noattrs <source_ip_address>:/source_vol  
<destination_ip_address>:/dest_vol
```

显示示例

```
[root@localhost linux]# ./xcp verify -noattrs <IP address of source NFS
server>:/source_vol <IP address
of destination NFS server>:/dest_vol

xcp: WARNING: No index name has been specified, creating one with name:
autoname_verify_2020-03-05_02.19.14.011569

40,397 scanned, 9,917 found, 4,249 compared, 4,249 same data, 211 MiB
in (41.6 MiB/s), 3.78 MiB
out (764 KiB/s), 5s
40,397 scanned, 14,533 found, 8,867 compared, 8,867 same data, 475 MiB
in (52.9 MiB/s), 6.06 MiB
out (466 KiB/s), 10s
40,397 scanned, 20,724 found, 15,038 compared, 15,038 same data, 811
MiB in (67.0 MiB/s), 9.13
MiB out (628 KiB/s), 15s
40,397 scanned, 25,659 found, 19,928 compared, 19,928 same data, 1.02
GiB in (46.6 MiB/s), 11.5
MiB out (477 KiB/s), 20s
40,397 scanned, 30,535 found, 24,803 compared, 24,803 same data, 1.32
GiB in (62.0 MiB/s), 14.0
MiB out (513 KiB/s), 25s
75,179 scanned, 34,656 indexed, 39,727 found, 32,595 compared, 32,595
same data, 1.58 GiB in
(53.4 MiB/s), 20.1 MiB out (1.22 MiB/s), 30s
75,179 scanned, 34,656 indexed, 47,680 found, 40,371 compared, 40,371
same data, 1.74 GiB in
(32.3 MiB/s), 23.6 MiB out (717 KiB/s), 35s
75,179 scanned, 34,656 indexed, 58,669 found, 51,524 compared, 51,524
same data, 1.93 GiB in
(37.9 MiB/s), 28.4 MiB out (989 KiB/s), 40s
78,097 scanned, 39,772 indexed, 69,343 found, 61,858 compared, 61,858
same data, 2.12 GiB in
(39.0 MiB/s), 33.4 MiB out (1015 KiB/s), 45s
110,213 scanned, 69,593 indexed, 80,049 found, 69,565 compared, 69,565
same data, 2.37 GiB in
(51.3 MiB/s), 39.3 MiB out (1.18 MiB/s), 50s
110,213 scanned, 69,593 indexed, 86,233 found, 75,727 compared, 75,727
same data, 2.65 GiB in
(57.8 MiB/s), 42.3 MiB out (612 KiB/s), 55s
110,213 scanned, 69,593 indexed, 93,710 found, 83,218 compared, 83,218
same data, 2.93 GiB in
(56.1 MiB/s), 45.8 MiB out (705 KiB/s), 1m0s
110,213 scanned, 69,593 indexed, 99,700 found, 89,364 compared, 89,364
```

```
same data, 3.20 GiB in
(56.9 MiB/s), 48.7 MiB out (593 KiB/s), 1m5s
124,888 scanned, 94,661 indexed, 107,509 found, 95,304 compared, 95,304
same data, 3.54 GiB in
(68.6 MiB/s), 53.5 MiB out (1000 KiB/s), 1m10s
134,630 scanned, 104,739 indexed, 116,494 found, 102,792 compared,
102,792 same data, 3.94 GiB
in (81.7 MiB/s), 58.2 MiB out (949 KiB/s), 1m15s
134,630 scanned, 104,739 indexed, 123,475 found, 109,601 compared,
109,601 same data, 4.28 GiB
in (70.0 MiB/s), 61.7 MiB out (711 KiB/s), 1m20s
134,630 scanned, 104,739 indexed, 129,354 found, 115,295 compared,
115,295 same data, 4.55 GiB
in (55.3 MiB/s), 64.5 MiB out (572 KiB/s), 1m25s
Xcp command : xcp verify -noattrs <IP address of source NFS
server>:/source_vol <IP address
of destination NFS server>:/dest_vol
134,630 scanned, 0 matched, 100% found (121,150 have data), 100%
verified (data, mods), 0
different item, 0 error
Speed : 4.95 GiB in (56.5 MiB/s), 69.2 MiB out (789 KiB/s)
Total Time : 1m29s.
STATUS : PASSED
```

验证-nomods

使用 `-nomods` 参数 `verify` 用于指定不检查文件修改时间的命令。

语法

```
xcp verify -nomods <source_ip_address>:/source_vol
<destination_ip_address>:/dest_vol
```

显示示例

```
[root@localhost linux]# ./xcp verify -nomods <IP address of NFS
server>:/source_vol <IP address of
destination NFS server>:/dest_vol

xcp: WARNING: No index name has been specified, creating one with name:
autoname_verify_2020-03-
05_02.22.33.738593
40,371 scanned, 10,859 found, 5,401 compared, 5,401 same data, 296 MiB
in (59.1 MiB/s), 4.29 MiB
out (876 KiB/s), 5s
40,371 scanned, 22,542 found, 17,167 compared, 17,167 same data, 743
MiB in (88.9 MiB/s), 9.67
MiB out (1.07 MiB/s), 10s
43,521 scanned, 4,706 indexed, 32,166 found, 26,676 compared, 26,676
same data, 1.17 GiB in
(91.3 MiB/s), 14.5 MiB out (996 KiB/s), 15s
70,260 scanned, 29,715 indexed, 43,680 found, 37,146 compared, 37,146
same data, 1.64 GiB in
(96.0 MiB/s), 21.5 MiB out (1.38 MiB/s), 20s
75,160 scanned, 34,722 indexed, 60,079 found, 52,820 compared, 52,820
same data, 2.01 GiB in
(74.4 MiB/s), 29.1 MiB out (1.51 MiB/s), 25s
102,874 scanned, 69,594 indexed, 77,322 found, 67,907 compared, 67,907
same data, 2.36 GiB in
(71.2 MiB/s), 38.3 MiB out (1.85 MiB/s), 30s
110,284 scanned, 69,594 indexed, 89,143 found, 78,952 compared, 78,952
same data, 2.82 GiB in
(92.8 MiB/s), 43.9 MiB out (1.08 MiB/s), 35s
112,108 scanned, 79,575 indexed, 100,228 found, 89,856 compared, 89,856
same data, 3.25 GiB in
(89.3 MiB/s), 49.6 MiB out (1.15 MiB/s), 40s
128,122 scanned, 99,743 indexed, 111,358 found, 98,663 compared, 98,663
same data, 3.80 GiB in
(112 MiB/s), 55.8 MiB out (1.24 MiB/s), 45s
134,630 scanned, 104,738 indexed, 123,253 found, 109,472 compared,
109,472 same data, 4.36 GiB
in (114 MiB/s), 61.7 MiB out (1.16 MiB/s), 50s
134,630 scanned, 119,809 indexed, 133,569 found, 120,008 compared,
120,008 same data, 4.94 GiB
in (115 MiB/s), 67.8 MiB out (1.20 MiB/s), 55s]

Xcp command : xcp verify -nomods <IP address of NFS server>:/source_vol
<IP address of destination NFS server>:/dest_vol
134,630 scanned, 0 matched, 100% found (121,150 have data), 100%
```

```
verified (data, attrs), 0
different item, 0 error
Speed : 4.95 GiB in (90.5 MiB/s), 69.2 MiB out (1.24 MiB/s)
Total Time : 56s.
STATUS : PASSED
```

验证-mtiewindow <s>

使用 -mtimewindow <s> 参数 verify 命令以指定可接受的修改时间差以进行验证。

语法

```
xcp verify -mtimewindow <s> <source_ip_address>:/source_vol
<destination_ip_address>:/dest_vol
```

显示示例

```
[root@localhost linux]# ./xcp verify -mtimewindow 2 <IP address of NFS
server>:/source_vol <IP address of destination NFS server>:/dest_vol

xcp: WARNING: No index name has been specified, creating one with name:
autoname_verify_2020-03-
06_02.26.03.797492
27,630 scanned, 9,430 found, 5,630 compared, 5,630 same data, 322 MiB
in (64.1 MiB/s), 3.91 MiB
out (798 KiB/s), 5s
38,478 scanned, 19,840 found, 14,776 compared, 14,776 same data, 811
MiB in (97.8 MiB/s), 8.86
MiB out (1012 KiB/s), 10s
55,304 scanned, 14,660 indexed, 29,893 found, 23,904 compared, 23,904
same data, 1.33 GiB in
(109 MiB/s), 14.6 MiB out (1.14 MiB/s), 15s
64,758 scanned, 24,700 indexed, 43,133 found, 36,532 compared, 36,532
same data, 1.65 GiB in
(65.3 MiB/s), 21.0 MiB out (1.28 MiB/s), 20s
75,317 scanned, 34,655 indexed, 56,020 found, 48,942 compared, 48,942
same data, 2.01 GiB in
(72.5 MiB/s), 27.4 MiB out (1.25 MiB/s), 25s
95,024 scanned, 54,533 indexed, 70,675 found, 61,886 compared, 61,886
same data, 2.41 GiB in
(81.3 MiB/s), 34.9 MiB out (1.49 MiB/s), 30s
102,407 scanned, 64,598 indexed, 85,539 found, 76,158 compared, 76,158
same data, 2.74 GiB in
(67.3 MiB/s), 42.0 MiB out (1.42 MiB/s), 35s
113,209 scanned, 74,661 indexed, 97,126 found, 86,525 compared, 86,525
same data, 3.09 GiB in
(72.6 MiB/s), 48.0 MiB out (1.19 MiB/s), 40s
125,040 scanned, 84,710 indexed, 108,480 found, 96,253 compared, 96,253
same data, 3.51 GiB in
(84.0 MiB/s), 53.6 MiB out (1.10 MiB/s), 45s
132,726 scanned, 99,775 indexed, 117,252 found, 103,740 compared,
103,740 same data, 4.04 GiB in
(108 MiB/s), 58.4 MiB out (986 KiB/s), 50s
134,633 scanned, 109,756 indexed, 126,700 found, 112,978 compared,
112,978 same data, 4.52 GiB
in (97.6 MiB/s), 63.6 MiB out (1.03 MiB/s), 55s
134,633 scanned, 129,807 indexed, 134,302 found, 120,779 compared,
120,779 same data, 4.95 GiB
in (86.5 MiB/s), 68.8 MiB out (1.02 MiB/s), 1m0s
Xcp command : xcp verify -mtimewindow 2 <IP address of NFS
```

```
server>:/source_vol <IP address of destination NFS server>:/dest_vol
134,633 scanned, 0 matched, 100% found (121,150 have data), 100%
verified (data, attrs, mods), 0
different item, 0 error
Speed : 4.95 GiB in (83.6 MiB/s), 69.2 MiB out (1.14 MiB/s)
Total Time : 1m0s.
STATUS : PASSED
```

验证-v和验证-l

使用 -v 和 l 参数 verify 命令以检索输出格式并列出发现的任何差异。

语法

```
xcp verify -v <source_ip_address>:/source_vol
<destination_ip_address>:/dest_vol
```




```

[root@localhost linux]# ./xcp verify -v <IP address of NFS
server>:/source_vol <IP address of destination NFS server>:/dest_vol

xcp: WARNING: No index name has been specified, creating one with name:
autoname_verify_2020-03-
05_02.26.30.055115
32,349 scanned, 10,211 found, 5,946 compared, 5,946 same data, 351 MiB
in (70.1 MiB/s), 4.27 MiB
out (872 KiB/s), 5s
40,301 scanned, 21,943 found, 16,619 compared, 16,619 same data, 874
MiB in (104 MiB/s), 9.74
MiB out (1.09 MiB/s), 10s
52,201 scanned, 14,512 indexed, 33,173 found, 27,622 compared, 27,622
same data, 1.35 GiB in
(102 MiB/s), 16.0 MiB out (1.24 MiB/s), 15s
70,886 scanned, 34,689 indexed, 46,699 found, 40,243 compared, 40,243
same data, 1.77 GiB in
(86.2 MiB/s), 23.3 MiB out (1.47 MiB/s), 20s
80,072 scanned, 39,708 indexed, 63,333 found, 55,743 compared, 55,743
same data, 2.04 GiB in
(55.4 MiB/s), 31.0 MiB out (1.54 MiB/s), 25s
100,034 scanned, 59,615 indexed, 76,848 found, 67,738 compared, 67,738
same data, 2.35 GiB in
(61.6 MiB/s), 37.6 MiB out (1.31 MiB/s), 30s
110,290 scanned, 69,597 indexed, 88,493 found, 78,203 compared, 78,203
same data, 2.75 GiB in
(81.7 MiB/s), 43.4 MiB out (1.14 MiB/s), 35s
116,829 scanned, 79,603 indexed, 102,105 found, 90,998 compared, 90,998
same data, 3.32 GiB in
(117 MiB/s), 50.3 MiB out (1.38 MiB/s), 40s
59
128,954 scanned, 94,650 indexed, 114,340 found, 101,563 compared,
101,563 same data, 3.91 GiB in
(121 MiB/s), 56.8 MiB out (1.30 MiB/s), 45s
134,630 scanned, 109,858 indexed, 125,760 found, 112,077 compared,
112,077 same data, 4.41 GiB
in (99.9 MiB/s), 63.0 MiB out (1.22 MiB/s), 50s
Xcp command : xcp verify -v <IP address of NFS server>:/source_vol <IP
address of destination NFS server>:/dest_vol
134,630 scanned, 0 matched, 100% found (121,150 have data), 100%
verified (data, attrs, mods), 0
different item, 0 error
Speed : 4.95 GiB in (91.7 MiB/s), 69.2 MiB out (1.25 MiB/s)
Total Time : 55s.
STATUS : PASSED

```

语法

```
xcp verify -l <source_ip_address>:/source_vol  
<destination_ip_address>:/dest_vol
```

显示示例

```
[root@localhost linux]# ./xcp verify -l <IP address of NFS
server>:/source_vol <IP address of destination NFS server>:/dest_vol

xcp: WARNING: No index name has been specified, creating one with name:
autoname_verify_2020-03-
05_02.27.58.969228
32,044 scanned, 11,565 found, 7,305 compared, 7,305 same data, 419 MiB
in (83.7 MiB/s), 4.93 MiB
out (1008 KiB/s), 5s
40,111 scanned, 21,352 found, 16,008 compared, 16,008 same data, 942
MiB in (104 MiB/s), 9.64
MiB out (962 KiB/s), 10s
53,486 scanned, 14,677 indexed, 30,840 found, 25,162 compared, 25,162
same data, 1.34 GiB in
(86.4 MiB/s), 15.0 MiB out (1.07 MiB/s), 15s
71,202 scanned, 34,646 indexed, 45,082 found, 38,555 compared, 38,555
same data, 1.72 GiB in
(76.7 MiB/s), 22.5 MiB out (1.51 MiB/s), 20s
75,264 scanned, 34,646 indexed, 60,039 found, 53,099 compared, 53,099
same data, 2.00 GiB in
(58.5 MiB/s), 29.1 MiB out (1.30 MiB/s), 25s
95,205 scanned, 54,684 indexed, 76,004 found, 67,054 compared, 67,054
same data, 2.34 GiB in
(67.5 MiB/s), 37.0 MiB out (1.57 MiB/s), 30s
110,239 scanned, 69,664 indexed, 87,892 found, 77,631 compared, 77,631
same data, 2.78 GiB in
(89.7 MiB/s), 43.2 MiB out (1.23 MiB/s), 35s
115,192 scanned, 79,627 indexed, 100,246 found, 89,450 compared, 89,450
same data, 3.22 GiB in
(90.0 MiB/s), 49.4 MiB out (1.24 MiB/s), 40s
122,694 scanned, 89,740 indexed, 109,158 found, 97,422 compared, 97,422
same data, 3.65 GiB in
(89.4 MiB/s), 54.2 MiB out (978 KiB/s), 45s
134,630 scanned, 104,695 indexed, 119,683 found, 106,036 compared,
106,036 same data, 4.17 GiB
in (105 MiB/s), 59.9 MiB out (1.11 MiB/s), 50s
134,630 scanned, 109,813 indexed, 129,117 found, 115,432 compared,
115,432 same data, 4.59 GiB
in (86.1 MiB/s), 64.7 MiB out (979 KiB/s), 55s
Xcp command : xcp verify -l <IP address of NFS server>:/source_vol <IP
address of destination NFS server>:/dest_vol
134,630 scanned, 0 matched, 100% found (121,150 have data), 100%
verified (data, attrs, mods), 0
```

```
different item, 0 error
```

```
Speed : 4.95 GiB in (84.9 MiB/s), 69.2 MiB out (1.16 MiB/s)
```

```
Total Time : 59s.
```

```
STATUS : PASSED
```

语法

```
xcp verify -v -l <source_ip_address>:/source_vol  
<destination_ip_address>:/dest_vol
```

```

[root@localhost linux]# ./xcp verify -v -l <IP address of NFS
server>:/source_vol <IP address of destination NFS server>:/dest_vol

xcp: WARNING: No index name has been specified, creating one with name:
autoname_verify_2020-03-
05_02.30.00.952454
24,806 scanned, 8,299 found, 4,817 compared, 4,817 same data, 296 MiB
in (59.1 MiB/s), 3.44 MiB
out (704 KiB/s), 5s
39,720 scanned, 20,219 found, 14,923 compared, 14,923 same data, 716
MiB in (84.0 MiB/s), 8.78
MiB out (1.07 MiB/s), 10s
44,395 scanned, 9,648 indexed, 29,851 found, 24,286 compared, 24,286
same data, 1.20 GiB in (102
MiB/s), 14.0 MiB out (1.05 MiB/s), 15s
62,763 scanned, 24,725 indexed, 40,946 found, 34,760 compared, 34,760
same data, 1.69 GiB in
(101 MiB/s), 20.2 MiB out (1.24 MiB/s), 20s
76,181 scanned, 39,708 indexed, 57,566 found, 50,595 compared, 50,595
same data, 1.98 GiB in
(58.7 MiB/s), 28.3 MiB out (1.61 MiB/s), 25s
90,411 scanned, 49,594 indexed, 73,357 found, 64,912 compared, 64,912
same data, 2.37 GiB in
(79.0 MiB/s), 35.8 MiB out (1.48 MiB/s), 30s

110,222 scanned, 69,593 indexed, 87,733 found, 77,466 compared, 77,466
same data, 2.77 GiB in
(80.5 MiB/s), 43.1 MiB out (1.45 MiB/s), 35s
116,417 scanned, 79,693 indexed, 100,053 found, 89,258 compared, 89,258
same data, 3.23 GiB in
(94.3 MiB/s), 49.4 MiB out (1.26 MiB/s), 40s
122,224 scanned, 89,730 indexed, 111,684 found, 100,059 compared,
100,059 same data, 3.83 GiB in
(123 MiB/s), 55.5 MiB out (1.22 MiB/s), 45s
134,630 scanned, 109,758 indexed, 121,744 found, 108,152 compared,
108,152 same data, 4.36 GiB
in (107 MiB/s), 61.3 MiB out (1.14 MiB/s), 50s
134,630 scanned, 119,849 indexed, 131,678 found, 118,015 compared,
118,015 same data, 4.79 GiB
in (87.2 MiB/s), 66.7 MiB out (1.08 MiB/s), 55s
Xcp command : xcp verify -v -l <IP address of NFS server>:/source_vol
<IP address of destination NFS server>:/dest_vol
134,630 scanned, 0 matched, 100% found (121,150 have data), 100%
verified (data, attrs, mods), 0

```

```
different item, 0 error
Speed : 4.95 GiB in (87.6 MiB/s), 69.2 MiB out (1.20 MiB/s)
Total Time : 57s.
STATUS : PASSED
```

验证-nonames

使用 `-nonames` 参数 `verify` 用于从文件列表或报告中排除用户和组名称的命令

语法

```
xcp verify -nonames <source_ip_address>:/source_vol
<destination_ip_address>:/dest_vol
```

显示示例



```

[root@localhost linux]# ./xcp verify -nonames <IP address of NFS
server>:/source_vol <IP address of destination NFS server>:/dest_vol

xcp: WARNING: No index name has been specified, creating one with name:
autoname_verify_2020-03-
05_04.03.58.173082
30,728 scanned, 9,242 found, 5,248 compared, 5,248 same data, 363 MiB
in (72.6 MiB/s), 3.93 MiB
out (805 KiB/s), 5s
40,031 scanned, 20,748 found, 15,406 compared, 15,406 same data, 837
MiB in (94.5 MiB/s), 9.19
MiB out (1.05 MiB/s), 10s
50,859 scanned, 9,668 indexed, 32,410 found, 26,305 compared, 26,305
same data, 1.30 GiB in
(99.5 MiB/s), 15.2 MiB out (1.20 MiB/s), 15s
73,631 scanned, 34,712 indexed, 45,362 found, 38,567 compared, 38,567
same data, 1.75 GiB in
(92.2 MiB/s), 22.6 MiB out (1.49 MiB/s), 20s
82,931 scanned, 44,618 indexed, 59,988 found, 52,270 compared, 52,270
same data, 2.08 GiB in
(66.7 MiB/s), 29.6 MiB out (1.39 MiB/s), 25s
96,691 scanned, 59,630 indexed, 77,567 found, 68,573 compared, 68,573
same data, 2.50 GiB in
(85.2 MiB/s), 38.2 MiB out (1.73 MiB/s), 30s
110,763 scanned, 74,678 indexed, 92,246 found, 82,010 compared, 82,010
same data, 2.93 GiB in
(88.8 MiB/s), 45.5 MiB out (1.45 MiB/s), 35s
120,101 scanned, 79,664 indexed, 105,420 found, 94,046 compared, 94,046
same data, 3.47 GiB in
(110 MiB/s), 51.9 MiB out (1.27 MiB/s), 40s
131,659 scanned, 99,780 indexed, 116,418 found, 103,109 compared,
103,109 same data, 4.05 GiB in
(120 MiB/s), 58.1 MiB out (1.25 MiB/s), 45s
134,630 scanned, 114,770 indexed, 127,154 found, 113,483 compared,
113,483 same data, 4.54 GiB
in (100 MiB/s), 64.1 MiB out (1.20 MiB/s), 50s
Xcp command : xcp verify -nonames <IP address of NFS
server>:/source_vol <IP address of destination NFS server>:/dest_vol
134,630 scanned, 0 matched, 100% found (121,150 have data), 100%
verified (data, attrs, mods), 0
different item, 0 error
Speed : 4.95 GiB in (92.5 MiB/s), 69.2 MiB out (1.26 MiB/s)
Total Time : 54s.
STATUS : PASSED

```


验证-match <filter>

使用 -match <filter> 参数 verify 命令以仅处理与筛选器匹配的文件和目录。

语法

```
xcp verify -match bin <source_ip_address>:/source_vol  
<destination_ip_address>:/dest_vol
```

显示示例



```

[root@localhost linux]# ./xcp verify -match bin <IP address of NFS
server>:/source_vol <IP address
of destination NFS server>:/dest_vol

xcp: WARNING: No index name has been specified, creating one with name:
autoname_verify_2020-03-
05_04.16.46.005121
32,245 scanned, 25,000 matched, 10,657 found, 6,465 compared, 6,465
same data, 347 MiB in (69.4
MiB/s), 4.44 MiB out (908 KiB/s), 5s
40,306 scanned, 35,000 matched, 21,311 found, 15,969 compared, 15,969
same data, 850 MiB in (101
MiB/s), 9.44 MiB out (1024 KiB/s), 10s
55,582 scanned, 45,000 matched, 14,686 indexed, 31,098 found, 25,293
compared, 25,293 same data,
1.33 GiB in (102 MiB/s), 15.1 MiB out (1.12 MiB/s), 15s
75,199 scanned, 65,000 matched, 34,726 indexed, 45,587 found, 38,738
compared, 38,738 same data,
1.72 GiB in (77.9 MiB/s), 22.7 MiB out (1.52 MiB/s), 20s
78,304 scanned, 70,000 matched, 39,710 indexed, 61,398 found, 54,232
compared, 54,232 same data,
2.08 GiB in (75.0 MiB/s), 30.0 MiB out (1.45 MiB/s), 25s
102,960 scanned, 95,000 matched, 69,682 indexed, 78,351 found, 69,034
compared, 69,034 same
data, 2.43 GiB in (71.9 MiB/s), 38.8 MiB out (1.76 MiB/s), 30s
110,344 scanned, 105,000 matched, 69,682 indexed, 93,873 found, 83,637
compared, 83,637 same
data, 2.85 GiB in (84.2 MiB/s), 45.6 MiB out (1.36 MiB/s), 35s
121,459 scanned, 120,000 matched, 84,800 indexed, 107,012 found, 95,357
compared, 95,357 same
data, 3.30 GiB in (92.8 MiB/s), 52.3 MiB out (1.33 MiB/s), 40s
130,006 scanned, 125,000 matched, 94,879 indexed, 115,077 found,
102,104 compared, 102,104 same
data, 3.97 GiB in (136 MiB/s), 57.2 MiB out (1001 KiB/s), 45s
134,630 scanned, 134,630 matched, 109,867 indexed, 125,755 found,
112,025 compared, 112,025 same
data, 4.53 GiB in (115 MiB/s), 63.2 MiB out (1.20 MiB/s), 50s
Xcp command : xcp verify -match bin <IP address of NFS
server>:/source_vol <IP address of destination NFS server>:/dest_vol
134,630 scanned, 134,630 matched, 100% found (121,150 have data), 100%
verified (data, attrs,
mods), 0 different item, 0 error
Speed : 4.95 GiB in (92.2 MiB/s), 69.2 MiB out (1.26 MiB/s)
Total Time : 54s.
STATUS : PASSED

```

验证-BS <n>

使用 `-bs <n>` 参数 `verify` 命令以指定读/写块大小。默认值为64k。

语法

```
xcp verify -bs 32k <source_ip_address>:/source_vol  
<destination_ip_address>:/dest_vol
```

```
[root@localhost linux]# ./xcp verify -bs 32k <IP address of NFS
server>:/source_vol <IP address of destination NFS server>:/dest_vol

xcp: WARNING: No index name has been specified, creating one with name:
autoname_verify_2020-03-
05_04.20.19.266399
29,742 scanned, 9,939 found, 5,820 compared, 5,820 same data, 312 MiB
in (62.3 MiB/s), 4.58 MiB
out (938 KiB/s), 5s
40,156 scanned, 20,828 found, 15,525 compared, 15,525 same data, 742
MiB in (85.0 MiB/s), 10.2
MiB out (1.10 MiB/s), 10s
41,906 scanned, 9,846 indexed, 30,731 found, 25,425 compared, 25,425
same data, 1.14 GiB in
(85.6 MiB/s), 16.1 MiB out (1.18 MiB/s), 15s
66,303 scanned, 29,712 indexed, 42,861 found, 36,708 compared, 36,708
same data, 1.61 GiB in
(94.9 MiB/s), 23.7 MiB out (1.53 MiB/s), 20s
70,552 scanned, 34,721 indexed, 58,157 found, 51,528 compared, 51,528
same data, 1.96 GiB in
(73.0 MiB/s), 31.4 MiB out (1.53 MiB/s), 25s
100,135 scanned, 59,611 indexed, 76,047 found, 66,811 compared, 66,811
same data, 2.29 GiB in
(66.3 MiB/s), 40.7 MiB out (1.82 MiB/s), 30s
105,951 scanned, 69,665 indexed, 90,022 found, 80,330 compared, 80,330
same data, 2.71 GiB in
(85.3 MiB/s), 48.1 MiB out (1.49 MiB/s), 35s
113,440 scanned, 89,486 indexed, 101,634 found, 91,152 compared, 91,152
same data, 3.19 GiB in
(97.8 MiB/s), 55.4 MiB out (1.45 MiB/s), 40s
128,693 scanned, 94,484 indexed, 109,999 found, 97,319 compared, 97,319
same data, 3.59 GiB in
(82.6 MiB/s), 60.2 MiB out (985 KiB/s), 45s
134,630 scanned, 94,484 indexed, 119,203 found, 105,402 compared,
105,402 same data, 3.98 GiB in
(78.3 MiB/s), 65.1 MiB out (986 KiB/s), 50s
134,630 scanned, 104,656 indexed, 127,458 found, 113,774 compared,
113,774 same data, 4.49 GiB
in (103 MiB/s), 70.8 MiB out (1.15 MiB/s), 55s
Xcp command : xcp verify -bs 32k <IP address of NFS server>:/source_vol
<IP address of destination NFS server>:/dest_vol
134,630 scanned, 0 matched, 100% found (121,150 have data), 100%
verified (data, attrs, mods), 0
```

```
different item, 0 error
Speed : 4.96 GiB in (84.5 MiB/s), 77.5 MiB out (1.29 MiB/s)
Total Time : 1m0s.
STATUS : PASSED
```

验证-**par**并口<n>

使用 `-parallel <n>` 参数 `verify` 命令以指定并发批处理进程的最大数量。

语法

```
xcp verify -parallel <source_ip_address>:/source_vol
<destination_ip_address>:/dest_vol
```

```
[root@localhost linux]# ./xcp verify -parallel 2 <IP address of NFS
server>:/source_vol <IP address of destination NFS server>:/dest_vol

xcp: WARNING: No index name has been specified, creating one with name:
autoname_verify_2020-03-
05_04.35.10.356405
15,021 scanned, 6,946 found, 4,869 compared, 4,869 same data, 378 MiB
in (74.5 MiB/s), 3.24 MiB
out (654 KiB/s), 5s
25,165 scanned, 9,671 indexed, 15,945 found, 12,743 compared, 12,743
same data, 706 MiB in (65.4
MiB/s), 7.81 MiB out (934 KiB/s), 10s
35,367 scanned, 19,747 indexed, 24,036 found, 19,671 compared, 19,671
same data, 933 MiB in
(45.3 MiB/s), 11.9 MiB out (827 KiB/s), 15s
45,267 scanned, 29,761 indexed, 32,186 found, 26,909 compared, 26,909
same data, 1.38 GiB in
(94.6 MiB/s), 16.5 MiB out (943 KiB/s), 20s
55,690 scanned, 39,709 indexed, 40,413 found, 34,805 compared, 34,805
same data, 1.69 GiB in
(62.8 MiB/s), 20.9 MiB out (874 KiB/s), 25s
55,690 scanned, 39,709 indexed, 48,325 found, 42,690 compared, 42,690
same data, 1.88 GiB in
(38.1 MiB/s), 24.3 MiB out (703 KiB/s), 31s
65,002 scanned, 49,670 indexed, 57,872 found, 51,891 compared, 51,891
same data, 2.04 GiB in
(33.2 MiB/s), 29.0 MiB out (967 KiB/s), 36s
75,001 scanned, 59,688 indexed, 66,789 found, 60,291 compared, 60,291
same data, 2.11 GiB in
(14.8 MiB/s), 33.4 MiB out (883 KiB/s), 41s
85,122 scanned, 69,690 indexed, 75,009 found, 67,337 compared, 67,337
same data, 2.42 GiB in
(62.3 MiB/s), 37.6 MiB out (862 KiB/s), 46s
91,260 scanned, 79,686 indexed, 82,097 found, 73,854 compared, 73,854
same data, 2.69 GiB in
(55.0 MiB/s), 41.4 MiB out (770 KiB/s), 51s
95,002 scanned, 79,686 indexed, 88,238 found, 79,707 compared, 79,707
same data, 2.99 GiB in
(60.7 MiB/s), 44.4 MiB out (608 KiB/s), 56s
105,002 scanned, 89,787 indexed, 96,059 found, 86,745 compared, 86,745
same data, 3.19 GiB in
(41.3 MiB/s), 48.4 MiB out (810 KiB/s), 1m1s
110,239 scanned, 99,872 indexed, 104,757 found, 94,652 compared, 94,652
```

```
same data, 3.47 GiB in
(57.0 MiB/s), 52.7 MiB out (879 KiB/s), 1m6s
120,151 scanned, 104,848 indexed, 111,491 found, 100,317 compared,
100,317 same data, 3.95 GiB
in (97.2 MiB/s), 56.3 MiB out (733 KiB/s), 1m11s
130,068 scanned, 114,860 indexed, 119,867 found, 107,260 compared,
107,260 same data, 4.25 GiB
in (60.5 MiB/s), 60.6 MiB out (871 KiB/s), 1m16s
134,028 scanned, 119,955 indexed, 125,210 found, 111,886 compared,
111,886 same data, 4.65 GiB
in (83.2 MiB/s), 63.7 MiB out (647 KiB/s), 1m21s
134,630 scanned, 129,929 indexed, 132,679 found, 119,193 compared,
119,193 same data, 4.93 GiB
in (56.8 MiB/s), 67.9 MiB out (846 KiB/s), 1m26s
Xcp command : xcp verify -parallel 2 <IP address of NFS
server>:/source_vol <IP address of destination NFS server>:/dest_vol
134,630 scanned, 0 matched, 100% found (121,150 have data), 100%
verified (data, attrs, mods), 0
different item, 0 error
```

验证-dircount <n[k]>

使用 `-dircount <n[k]>` 参数 `verify` 命令以指定读取目录时的请求大小。默认值为64k。

语法

```
xcp verify -dircount <n[k]> <source_ip_address>:/source_vol
<destination_ip_address>:/dest_vol
```


显示示例

```
[root@localhost linux]# ./xcp verify -dircount 32k <IP address of NFS
server>:/source_vol <IP address of destination NFS server>:/dest_vol

xcp: WARNING: No index name has been specified, creating one with name:
autoname_verify_2020-03-
05_04.28.58.235953
32,221 scanned, 10,130 found, 5,955 compared, 5,955 same data, 312 MiB
in (62.1 MiB/s), 4.15 MiB
out (848 KiB/s), 5s
40,089 scanned, 21,965 found, 16,651 compared, 16,651 same data, 801
MiB in (97.5 MiB/s), 9.55
MiB out (1.07 MiB/s), 10s

51,723 scanned, 14,544 indexed, 33,019 found, 27,288 compared, 27,288
same data, 1.24 GiB in
(93.8 MiB/s), 15.6 MiB out (1.22 MiB/s), 15s
67,360 scanned, 34,733 indexed, 45,615 found, 39,341 compared, 39,341
same data, 1.73 GiB in
(100 MiB/s), 22.8 MiB out (1.43 MiB/s), 20s
82,314 scanned, 44,629 indexed, 63,276 found, 55,559 compared, 55,559
same data, 2.05 GiB in
(64.7 MiB/s), 31.0 MiB out (1.63 MiB/s), 25s
100,085 scanned, 59,585 indexed, 79,799 found, 70,618 compared, 70,618
same data, 2.43 GiB in
(77.2 MiB/s), 38.9 MiB out (1.57 MiB/s), 30s
110,158 scanned, 69,651 indexed, 93,005 found, 82,654 compared, 82,654
same data, 2.87 GiB in
(89.1 MiB/s), 45.4 MiB out (1.28 MiB/s), 35s
120,047 scanned, 79,641 indexed, 104,539 found, 93,226 compared, 93,226
same data, 3.40 GiB in
(108 MiB/s), 51.4 MiB out (1.20 MiB/s), 40s
130,362 scanned, 94,662 indexed, 114,193 found, 101,230 compared,
101,230 same data, 3.87 GiB in
(97.3 MiB/s), 56.7 MiB out (1.06 MiB/s), 45s
134,630 scanned, 104,789 indexed, 124,272 found, 110,547 compared,
110,547 same data, 4.33 GiB
in (94.2 MiB/s), 62.3 MiB out (1.12 MiB/s), 50s
134,630 scanned, 129,879 indexed, 133,227 found, 119,717 compared,
119,717 same data, 4.93 GiB
in (119 MiB/s), 68.2 MiB out (1.17 MiB/s), 55s
Xcp command : xcp verify -dircount 32k <IP address of NFS
server>:/source_vol <IP address of destination NFS server>:/dest_vol
134,630 scanned, 0 matched, 100% found (121,150 have data), 100%
verified (data, attrs, mods), 0
```

```
different item, 0 error
Speed : 4.95 GiB in (89.3 MiB/s), 69.2 MiB out (1.22 MiB/s)
Total Time : 56s.
STATUS : PASSED
```

验证-nold

使用 `-noId` 参数 `verify` 命令以禁止创建默认索引。默认值为 `false`。

语法

```
xcp verify -noId <source_ip_address>:/source_vol
<destination_ip_address>:/dest_vol
```

显示示例

```
[root@localhost linux]# ./xcp verify -noid <IP address of source NFS
server>:/source_vol <IP address of destination NFS server>:/dest_vol

Job ID: Job_2024-04-22_07.19.41.825308_verify
 49,216 scanned, 10,163 found, 9,816 compared, 9.59 KiB same data, 1.15
GiB in (234 MiB/s), 5.67 MiB out (1.13 MiB/s), 6s
 49,615 scanned, 4,958 indexed, 27,018 found, 26,534 compared, 25.9 KiB
same data, 3.08 GiB in (390 MiB/s), 15.1 MiB out (1.86 MiB/s), 11s
 73,401 scanned, 34,884 indexed, 46,365 found, 45,882 compared, 44.8
KiB same data, 5.31 GiB in (420 MiB/s), 26.6 MiB out (2.12 MiB/s), 16s
 80,867 scanned, 44,880 indexed, 63,171 found, 62,704 compared, 61.2
KiB same data, 7.23 GiB in (377 MiB/s), 36.2 MiB out (1.83 MiB/s), 21s
 83,102 scanned, 69,906 indexed, 79,587 found, 79,246 compared, 77.4
KiB same data, 9.13 GiB in (387 MiB/s), 46.0 MiB out (1.95 MiB/s), 26s

Xcp command : xcp verify 10.235.122.70:/source_vol
10.235.122.86:/dest_vol
Stats       : 83,102 scanned, 83,102 indexed, 100% found (82,980 have
data), 82,980 compared, 100% verified (data, attrs, mods)
Speed      : 9.55 GiB in (347 MiB/s), 48.4 MiB out (1.72 MiB/s)
Total Time : 28s.
Job ID     : Job_2024-04-22_07.19.41.825308_verify
Log Path   : /opt/NetApp/xFiles/xcp/xcplogs/Job_2024-04-
22_07.19.41.825308_verify.log
STATUS    : PASSED
```

验证-保留-数据

使用 `-preserve-atime` 参数 `verify` 命令将源上的所有文件还原到上次访问的日期。。 `-preserve-atime` 参数用于将访问时间重置为执行XCP读取操作之前设置的原始值。

语法

```
xcp verify -preserve-atime <source_ip_address>:/source_vol  
<destination_ip_address>:/dest_vol
```

显示示例

```
[root@client1 linux]# ./xcp verify -preserve-atime  
<IP_address>:/source_vol <destination_IP_address>:/dest_vol  
  
xcp: WARNING: No index name has been specified, creating one with name:  
XCP_verify_2022-06-  
30_15.29.03.686503  
xcp: Job ID: Job_2022-06-30_15.29.03.723260_verify  
Xcp command : xcp verify -preserve-atime <IP_address>:/source_vol  
<destination_IP_address>:/dest_vol Stats :  
110 scanned, 110 indexed, 100% found (96 have data), 96 compared, 100%  
verified (data, attrs,  
mods)  
Speed : 4.87 MiB in (3.02 MiB/s), 160 KiB out (99.4 KiB/s) Total Time :  
1s.  
Job ID : Job_2022-06-30_15.29.03.723260_verify  
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2022-06-  
30_15.29.03.723260_verify.log STATUS :  
PASSED
```

验证-s3.insecure

使用 `-s3.insecure` 参数 `verify` 用于使用HTTP而非HTTPS进行S3存储分段通信的命令。

语法

```
xcp verify -s3.insecure hdfs:///user/test s3://<bucket_name>
```

显示示例

```
[root@client1 linux]# ./xcp verify -s3.insecure hdfs://<HDFS source>
s3://<s3-bucket>

xcp: WARNING: No index name has been specified, creating one with name:
XCP_verify_2023-06-
08_09.04.33.301709
Job ID: Job_2023-06-08_09.04.33.301709_verify
Xcp command : xcp verify -s3.insecure hdfs://<HDFS source> s3://<s3-
bucket>
Stats : 8 scanned, 8 indexed, 100% found (5 have data), 5 compared,
100% verified (data)
Speed : 21.3 KiB in (8.20 KiB/s), 90.8 KiB out (34.9 KiB/s)
Total Time : 2s.
Job ID : Job_2023-06-08_09.04.33.301709_verify
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-06-
08_09.04.33.301709_verify.log
STATUS : PASSED
```

验证-s3.Endpoint <s3_endpoint_url>

使用 `-s3.endpoint <s3_endpoint_url>` 参数 `verify` 命令以使用指定的URL覆盖默认AWS端点URL以进行S3存储分段通信。

语法

```
xcp verify -s3.endpoint https://<endpoint_url>: s3://<bucket_name>
```

显示示例

```
[root@client1 linux]# ./xcp verify -s3.endpoint https://<endpoint_url>
hdfs://<HDFS source> s3://<s3-bucket>

xcp: WARNING: No index name has been specified, creating one with name:
XCP_verify_2023-06-
13_11.20.48.203492
Job ID: Job_2023-06-13_11.20.48.203492_verify
2 scanned, 2 found, 9.55 KiB in (1.90 KiB/s), 12.5 KiB out (2.50
KiB/s), 5s
Xcp command : xcp verify -s3.endpoint https://<endpoint_url>
hdfs://<HDFS source> s3://<s3-bucket>
Stats : 8 scanned, 8 indexed, 100% found (5 have data), 5 compared,
100% verified (data)
Speed : 21.3 KiB in (2.28 KiB/s), 91.1 KiB out (9.72 KiB/s)
Total Time : 9s.
Job ID : Job_2023-06-13_11.20.48.203492_verify
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-06-
13_11.20.48.203492_verify.log
STATUS : PASSED
```

验证-s3.profile <name>

使用 s3.profile 参数 verify 命令以从AWS凭据文件指定用于S3存储分段通信的配置文件。

语法

```
xcp verify -s3.profile <name> -s3.endpoint https://<endpoint_url>:
s3://<bucket_name>
```

显示示例

```
[root@client1 linux]# ./xcp verify -s3.profile sg -s3.endpoint
https://<endpoint_url> hdfs://<HDFS source> s3://<s3-bucket>

xcp: WARNING: No index name has been specified, creating one with name:
XCP_verify_2023-06-
08_09.05.22.412914
Job ID: Job_2023-06-08_09.05.22.412914_verify
Xcp command : xcp verify -s3.profile sg -s3.endpoint
https://<endpoint_url> hdfs://<HDFS source> s3://<s3-bucket>
Stats : 8 scanned, 8 indexed, 100% found (5 have data), 5 compared,
100% verified (data)
Speed : 21.3 KiB in (6.52 KiB/s), 91.2 KiB out (27.9 KiB/s)
Total Time : 3s.
Job ID : Job_2023-06-08_09.05.22.412914_verify
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-06-
08_09.05.22.412914_verify.log
STATUS : PASSED
[root@client1 linux]# ./xcp verify -s3.profile sg -s3.endpoint
https://<endpoint_url> hdfs://<HDFS source> s3://<s3-bucket>

xcp: WARNING: No index name has been specified, creating one with name:
XCP_verify_2023-06-
08_09.20.53.763772
Job ID: Job_2023-06-08_09.20.53.763772_verify
Xcp command : xcp verify -s3.profile sg -s3.endpoint
https://<endpoint_url>
hdfs://<HDFS source> s3://<s3-bucket>
Stats : 8 scanned, 8 indexed, 100% found (5 have data), 5 compared,
100% verified (data)
Speed : 25.3 KiB in (14.5 KiB/s), 93.7 KiB out (53.8 KiB/s)
Total Time : 1s.
Job ID : Job_2023-06-08_09.20.53.763772_verify
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-06-
08_09.20.53.763772_verify.log
STATUS : PASSED
```

验证-s3.noverify

使用 `-s3.noverify` 参数 `verify` 用于覆盖S3存储分段通信的SSL认证默认验证的命令。

语法

```
xcp verify -s3.noverify s3://<bucket_name>
```

显示示例

```
[root@client1 linux]# ./xcp verify -s3.noverify hdfs://<HDFS source>
s3://<s3-bucket>

xcp: WARNING: No index name has been specified, creating one with name:
XCP_verify_2023-06-
13_10.59.01.817044
Job ID: Job_2023-06-13_10.59.01.817044_verify
Xcp command : xcp verify -s3.noverify hdfs://<HDFS source> s3://<s3-
bucket>
Stats : 8 scanned, 8 indexed, 100% found (5 have data), 5 compared,
100% verified (data)
Speed : 21.3 KiB in (5.84 KiB/s), 90.8 KiB out (24.9 KiB/s)
Total Time : 3s.
Job ID : Job_2023-06-13_10.59.01.817044_verify
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-06-
13_10.59.01.817044_verify.log
STATUS : PASSED

./xcp verify -s3.profile sg -s3.noverify -s3.endpoint
https://<endpoint_url> hdfs://<HDFS source> s3://<s3-bucket>

xcp: WARNING: No index name has been specified, creating one with name:
XCP_verify_2023-06-
13_11.29.00.543286
Job ID: Job_2023-06-13_11.29.00.543286_verify
15,009 scanned, 9 indexed, 1,194 found, 908 compared, 908 same data,
4.87 MiB in (980 KiB/s), 199 KiB
out (39.1 KiB/s), 5s
15,009 scanned, 9 indexed, 2,952 found, 2,702 compared, 2.64 KiB same
data, 8.56 MiB in (745 KiB/s),
446 KiB out (48.7 KiB/s), 10s
15,009 scanned, 9 indexed, 4,963 found, 4,841 compared, 4.73 KiB same
data, 12.9 MiB in (873 KiB/s),
729 KiB out (55.9 KiB/s), 15s
15,009 scanned, 9 indexed, 6,871 found, 6,774 compared, 6.62 KiB same
data, 16.9 MiB in (813 KiB/s),
997 KiB out (53.4 KiB/s), 20s
15,009 scanned, 9 indexed, 8,653 found, 8,552 compared, 8.35 KiB same
data, 20.6 MiB in (745 KiB/s),
1.22 MiB out (49.3 KiB/s), 25s
15,009 scanned, 9 indexed, 10,436 found, 10,333 compared, 10.1 KiB same
data, 24.3 MiB in (754
KiB/s), 1.46 MiB out (49.8 KiB/s), 31s
15,009 scanned, 9 indexed, 12,226 found, 12,114 compared, 11.8 KiB same
```



```

data, 28.0 MiB in (751
KiB/s), 1.71 MiB out (49.7 KiB/s), 36s
15,009 scanned, 9 indexed, 14,005 found, 13,895 compared, 13.6 KiB same
data, 31.7 MiB in (756
KiB/s), 1.95 MiB out (50.0 KiB/s), 41s
15,009 scanned, 9 indexed, 14,229 found, 14,067 compared, 13.7 KiB same
data, 32.2 MiB in (102
KiB/s), 1.98 MiB out (6.25 KiB/s), 46s
Xcp command : xcp verify -s3.profile sg -s3.noverify -s3.endpoint
https://<endpoint_url> <HDFS source> s3://<s3-bucket>
Stats : 15,009 scanned, 15,009 indexed, 100% found (15,005 have data),
15,005 compared, 100%
verified (data)
Speed : 33.9 MiB in (724 KiB/s), 2.50 MiB out (53.5 KiB/s)
Total Time : 47s.
Job ID : Job_2023-06-13_11.29.00.543286_verify
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-06-
13_11.29.00.543286_verify.log
STATUS : PASSED

```

chmod

XCP NFS `chmod` 命令扫描并更改给定目录结构中所有文件的文件权限。"chmod"命令需要使用mode或reference、NFS共享或POSIX路径作为变量。XCP `chmod` 命令以递归方式更改给定路径的权限。命令输出将显示扫描的总文件数以及更改的权限。

语法

```
xcp chmod -mode <value> <source NFS export path>
```

显示示例

```

[root@user-1 linux]# ./xcp chmod -mode <IP address>:/source_vol

Xcp command : xcp chmod -mode <IP address>://source_vol
Stats : 6 scanned, 4 changed mode
Speed : 1.96 KiB in (2.13 KiB/s), 812 out (882/s)
Total Time : 0s.
STATUS : PASSED
[root@user-1 linux] #

```

下表列出了 `chmod` 参数及其问题描述。

参数	Description
<<nfs_chmod_exclude,chmod -排除(); 过滤器(gt);	排除与筛选器匹配的文件和目录。
<<nfs_chmod_match,chmod -匹配过滤器	仅处理与筛选器匹配的文件和目录。
<<nfs_chmod_reference,chmod -参考(); 参考();	指定引用的文件或目录点。
chmod -v	报告处理的每个对象的输出。

chmod -排除<filter>

使用 `-exclude <filter>` 参数 `chmod` 命令以排除与筛选器匹配的文件和目录。

语法

```
xcp chmod -exclude <filter> -mode <value> <source NFS export path>
```

显示示例

```
[root@user-1 linux]# ./xcp chmod -exclude "fnm('3.img')" -mode 770
101.11.10.10:/s_v1/D3/

Excluded: 1 excluded, 0 did not match exclude criteria
Xcp command : xcp chmod -exclude fnm('3.img') -mode 770
101.11.10.10:/s_v1/D3/
Stats : 5 scanned, 1 excluded, 5 changed mode
Speed : 2.10 KiB in (7.55 KiB/s), 976 out (3.43 KiB/s)
Total Time : 0s.
STATUS : PASSED
[root@user-1 linux]#
```

chmod -match <filter>

使用 `-match <filter>` 参数 `chmod` 命令以仅处理与筛选器匹配的文件和目录。

语法

```
xcp chmod -match <filter> -mode <value> <source NFS export path>
```

显示示例

```
[root@user-1 linux]# ./xcp chmod -match "fnm('2.img')" -mode 777
101.11.10.10:/s_v1/D2/

Filtered: 1 matched, 5 did not match
Xcp command : xcp chmod -match fnm('2.img') -mode
101.11.10.10:/s_v1/D2/
Stats : 6 scanned, 1 matched, 2 changed mode
Speed : 1.67 KiB in (1.99 KiB/s), 484 out (578/s)
Total Time : 0s.
STATUS : PASSED
[root@user-1 linux]
```

chmod -reference <reference>

使用 `-reference <reference>` 参数 `chmod` 用于指定引用的文件或目录点的命令。

语法

```
xcp chmod -reference <reference> <source NFS export path>
```

显示示例

```
[root@user-1 linux]# ./xcp chmod -reference 101.11.10.10:/s_v1/D1/1.txt
102.21.10.10:/s_v1/D2/

Xcp command : xcp chmod -reference 101.11.10.10:/s_v1/D1/1.txt
102.21.10.10:/s_v1/D2/
Stats : 6 scanned, 6 changed mode
Speed : 3.11 KiB in (3.15 KiB/s), 1.98 KiB out (2.00 KiB/s)
Total Time : 0s.
STATUS : PASSED
[root@user-1 linux]#
```

chmod -v

使用 `-v` 参数 `chmod` 用于报告已处理的每个对象的输出的命令。

语法

```
chmod -mode <value> -v <source NFS export path>
```

显示示例

```
[root@user-1 linux]# ./xcp chmod -mode 111 -v file:///mnt/s_v1/D1/

mode of 'file:///mnt/s_v1/D1' changed from 0777 to 0111
mode of 'file:///mnt/s_v1/D1/1.txt' changed from 0777 to 0111
mode of 'file:///mnt/s_v1/D1/softlink_1.img' changed from 0777 to 0111
mode of 'file:///mnt/s_v1/D1/softlink_to_hardlink_1.img' changed from
0777 to 0111 mode
of 'file:///mnt/s_v1/D1/1.img' changed from 0777 to 0111
mode of 'file:///mnt/s_v1/D1/hardlink_1.img' changed from 0777 to 0111
mode of
'file:///mnt/s_v1/D1/1.img1' changed from 0777 to 0111
Xcp command : xcp chmod -mode 111 -v file:///mnt/s_v1/D1/ Stats : 7
scanned, 7
changed mode
Speed : 0 in (0/s), 0 out (0/s)
Total Time : 0s.
STATUS : PASSED
[root@user-1 linux]#
```

chown

XCP NFS `chown` 命令扫描并更改给定目录结构中所有文件的所有权。。 `chown` 命令需要使用NFS共享或POSIX路径作为变量。XCP `chown`以递归方式更改给定路径的所有权。。 `chown` 命令可显示文件的已更改用户ID (UID)。

语法

```
xcp chown -user/--group <user-name/group-name> <source NFS export path>
```

显示示例

```
[root@user-1 linux]# ./xcp chown -user user2 -v
101.101.10.110:/s_v1/smaple_set/D1

Sat Apr 2 23:06:05 2022
changed ownership of 101.101.10.110:/s_v1/smaple_set/D1 from 1001:0 to
1004:0
changed ownership of 101.101.10.110:/s_v1/smaple_set/D1/1.txt from
1001:0 to 1004:0
changed ownership of 101.101.10.110:/s_v1/smaple_set/D1/softlink_1.img
from 1001:0 to 1004:0
changed ownership of 101.101.10.110:/s_v1/smaple_set/D1/1.img from
1001:0 to 1004:0
changed ownership of 101.101.10.110:/s_v1/smaple_set/D1/hardlink_1.img
from 1001:0 to 1004:0
changed ownership of
101.101.10.110:/s_v1/smaple_set/D1/softlink_to_hardlink_1.img from
1001:0 to
1004:0
Xcp command : xcp chown -user user2 -v
101.101.10.110:/s_v1/smaple_set/D1
Stats : 6 scanned, 6 changed ownership
Speed : 2.25 KiB in (1.82 KiB/s), 1.11 KiB out (923/s)
Total Time : 1s.
STATUS : PASSED
[root@user-1 linux]#
```

下表列出了 `chown` 参数及其问题描述。

参数	Description
<<nfs_chown_exclude,chown -排除(); 过滤器();	排除与筛选器匹配的文件和目录。
<<nfs_chown_match,chown -match (); 过滤器(gt);	仅处理与筛选器匹配的文件和目录。
<<nfs_chown_group,chown -group	设置源上的Linux组ID (GID)。
<<nfs_chown_user,chown -user	设置源上的Linux UID。
<<nfs_chown_user_from,chown -user-from () ; user_from (gt);	更改UID。
<<nfs_chown_group_from,chown -group-from () ; group_from (gt);	更改GID。
<<nfs_chown_reference,chown -参考(); 参考();	指定引用的文件或目录点。
<code>chown -v</code>	报告处理的每个对象的输出。

chown -排除<filter>

使用 `-exclude <filter>` 参数 `chown` 命令以排除与筛选器匹配的文件和目录。

语法

```
xcp chown -exclude <filter> -user <user_name> <source NFS export path>
```

显示示例

```
[root@user-1 linux]# ./xcp chown -exclude "fnm('1.img')" -user user2
101.101.10.210:/s_v1/smaple_set/D1

Excluded: 1 excluded, 0 did not match exclude criteria
Xcp command : xcp chown -exclude fnm('1.img') -user
user2101.101.10.210:/s_v1/smaple_set/D1
Stats : 5 scanned, 1 excluded, 5 changed ownership
Speed : 2.10 KiB in (1.75 KiB/s), 976 out (812/s)
Total Time : 1s.
STATUS : PASSED
[root@user-1 linux]#
```

chown -match <filter>

使用 `-match <filter>` 参数 `chown` 命令以仅处理与筛选器匹配的文件和目录。

语法

```
xcp chown -match <filter> -user <user_name> <source NFS export path>
```

显示示例

```
[root@user-1 linux]# ./xcp chown -exclude "fnm('1.img')" -user user2
101.101.10.210:/s_v1/smaple_set/D1

Excluded: 1 excluded, 0 did not match exclude criteria
Xcp command : xcp chown -exclude fnm('1.img') -user
user2101.101.10.210:/s_v1/smaple_set/D1
Stats : 5 scanned, 1 excluded, 5 changed ownership
Speed : 2.10 KiB in (1.75 KiB/s), 976 out (812/s)
Total Time : 1s.
STATUS : PASSED
[root@user-1 linux]#
```

chown -group <group>

使用 `-group <group>` 参数 `chown` 命令以设置源上的Linux GID。

语法

```
xcp chown -match <filter> -user <user_name> <source NFS export path>
```

显示示例

```
[root@user-1 linux]# ./xcp chown -group group1
101.101.10.210:/s_v1/smaple_set/D1

Xcp command : xcp chown -group group1
101.101.10.210:/s_v1/smaple_set/D1
Stats : 6 scanned, 6 changed ownership
Speed : 2.25 KiB in (1.92 KiB/s), 1.11 KiB out (974/s)
Total Time : 1s.
STATUS : PASSED
[root@user-1 linux]#
```

chown -user <user>

使用 `-user <user>` 参数 `chown` 命令以设置源上的Linux UID。

语法

```
xcp chown -user -user <user_name> <source NFS export path>
```

显示示例

```
[root@user-1 linux]# ./xcp chown -user user1
102.101.10.210:/s_v1/smaple_set/D1

Xcp command : xcp chown -user user1 102.101.10.210:/s_v1/smaple_set/D1
Stats : 6 scanned, 6 changed ownership
Speed : 2.25 KiB in (3.12 KiB/s), 1.11 KiB out (1.55 KiB/s)
Total Time : 0s.
STATUS : PASSED
[root@user-1 linux]#
```

chown -user-from <user_from>

使用 `-user-from <user_from>` 参数 `chown` 命令以更改UID。

语法

```
xcp chown -user-from user1 -user <user_name> <source NFS export path>
```

显示示例

```
[root@user-1 linux]# ./xcp chown -user-from user1 -user user2
101.101.10.210:/s_v1/smaple_set/D1

Xcp command : xcp chown -user-from user1 -user user2
102.108.10.210:/s_v1/smaple_set/D1
Stats : 6 scanned, 6 changed ownership
Speed : 2.25 KiB in (2.44 KiB/s), 1.11 KiB out (1.21 KiB/s)
Total Time : 0s.
STATUS : PASSED
[root@user-1 linux]#
```

chown -group-from <group_from>

使用 `-group-from <group_from>` 参数 `chown` 命令以更改GID。

语法

```
xcp chown -group-from <group_name> -group <group_name> <source NFS export
path>
```


显示示例

```
[root@user-1 linux]# ./xcp chown -group-from group1 -group group2
101.101.10.210:/s_v1/smaple_set/D1

Xcp command : xcp chown -group-from group1 -group group2
101.101.10.210:/s_v1/smaple_set/D1
Stats : 6 scanned, 6 changed ownership
Speed : 2.25 KiB in (4.99 KiB/s), 1.11 KiB out (2.47 KiB/s)
Total Time : 0s.
STATUS : PASSED
[root@user-1 linux]#
```

chown -reference <reference>

使用 `-reference <reference>` 参数 `chown` 用于指定引用的文件或目录点的命令。

语法

```
xcp chown -reference <reference> <source NFS export path>
```

显示示例

```
[root@user-1 linux]# ./xcp chown -reference
101.101.10.210:/s_v1/smaple_set/D2/2.img
101.101.10.210:/s_v1/smaple_set/D1

Xcp command : xcp chown -reference
101.101.10.210:/s_v1/smaple_set/D2/2.img
101.101.10.210:/s_v1/smaple_set/D1
Stats : 6 scanned, 6 changed ownership
Speed : 3.11 KiB in (6.25 KiB/s), 2.01 KiB out (4.05 KiB/s)
Total Time : 0s.
STATUS : PASSED
[root@user-1 linux]#
```

chown -v

使用 `-v` 参数 `chown` 用于报告已处理的每个对象的输出的命令。

语法

```
xcp chown -user-from <user_name> -v -user <user_name> <source NFS export path>
```

显示示例

```
[root@user-1 linux]# ./xcp chown -user-from user2 -v -user user1
101.101.10.210:/s_v1/smaple_set/D1

changed ownership of 101.101.10.210:/s_v1/smaple_set/D1 from 1004:1003
to 1001:1003
changed ownership of 101.101.10.210:/s_v1/smaple_set/D1/1.img from
1004:1003 to 1001:1003
changed ownership of 101.101.10.210:/s_v1/smaple_set/D1/1.txt from
1004:1003 to 1001:1003
changed ownership of 101.101.10.210:/s_v1/smaple_set/D1/softlink_1.img
from 1004:1003 to
1001:1003
changed ownership of
101.101.10.210:/s_v1/smaple_set/D1/softlink_to_hardlink_1.img from
1004:1003 to 1001:1003
changed ownership of 101.101.10.210:/s_v1/smaple_set/D1/hardlink_1.img
from 1004:1003 to
1001:1003
Xcp command : xcp chown -user-from user2 -v -user user1
101.101.10.210:/s_v1/smaple_set/D1
Stats : 6 scanned, 6 changed ownership
Speed : 2.25 KiB in (2.02 KiB/s), 1.11 KiB out (1.00 KiB/s)
Total Time : 1s.

STATUS : PASSED
[root@user-1]
```

日志转储

NFS logdump 命令会根据迁移ID或作业ID筛选日志、并将这些日志转储到 .zip 文件。 。 .zip 文件的名称与命令所使用的迁移ID或作业ID相同。

语法

```
xcp logdump -m <migration ID>
xcp logdump -j <job ID>
```

显示示例

```
[root@client1 xcp_nfs]# xcp logdump -j Job_2022-06-14_21.49.28.060943_scan

xcp: Job ID: Job_2022-06-14_21.52.48.744198_logdump
Xcp command : xcp logdump -j Job_2022-06-14_21.49.28.060943_scan
Stats :
Speed : 0 in (0/s), 0 out (0/s)
Total Time : 0s.
Job ID : Job_2022-06-14_21.52.48.744198_logdump
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2022-06-14_21.52.48.744198_logdump.log
STATUS : PASSED
[root@client xcp_nfs]# ls Job_2022-06-14_21.49.28.060943_scan
Job_2022-06-14_21.49.28.060943_scan.log supplementary
[root@client1 xcp_nfs]# ls Job_2022-06-14_21.49.28.060943_scan/supplementary/
Job_idx_2022-06-14_21.46.05.167338_copy.log Job_idx_2022-06-14_21.47.41.868410_sync.log
xcp_history.json

Job_idx_2022-06-14_21.46.35.134294_sync.log Job_idx_2022-06-14_21.48.00.085869_sync.log
[root@client1 xcp_nfs]#
[root@client1 xcp_nfs]# ./xcp logdump -m idx

xcp: Job ID: Job_2022-06-14_21.56.04.218977_logdump
Xcp command : xcp logdump -m idx
Stats :
Speed : 0 in (0/s), 0 out (0/s)
Total Time : 0s.
Job ID : Job_2022-06-14_21.56.04.218977_logdump
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2022-06-14_21.56.04.218977_logdump.log
STATUS : PASSED
[root@client1 xcp_nfs]# ls idx
Job_idx_2022-06-14_21.46.05.167338_copy.log Job_idx_2022-06-14_21.47.41.868410_sync.log
xcp_history.json
Job_idx_2022-06-14_21.46.35.134294_sync.log Job_idx_2022-06-14_21.48.00.085869_sync.log
```

删除

XCP NFS delete 命令将删除给定路径中的所有内容。

语法

```
xcp delete <NFS export path>
```

```
[root@localhost ]# /xcp/linux/xcp delete <IP address of destination
NFSserver>:/dest_vol

WARNING: You have selected <IP address of destination NFS
server>:/dest_vol for
removing data.Data in this path /dest_vol will be deleted.
Are you sure you want to delete (yes/no): yes
Recursively removing data in <IP address of destination NFS
server>:/dest_vol ...
31,996 scanned, 5,786 removes, 3 rmdirs, 8.27 MiB in (1.65 MiB/s), 1.52
MiB out (312
KiB/s), 5s
40,324 scanned, 19,829 removes, 22 rmdirs, 12.2 MiB in (799 KiB/s),
3.89 MiB out
(485 KiB/s),10s
54,281 scanned, 32,194 removes, 2,365 rmdirs, 17.0 MiB in (991 KiB/s),
6.15 MiB out
(463 KiB/s),15s
75,869 scanned, 44,903 removes, 4,420 rmdirs, 23.4 MiB in (1.29 MiB/s),
8.60
MiB out (501KiB/s), 20s
85,400 scanned, 59,728 removes, 5,178 rmdirs, 27.8 MiB in (881 KiB/s),
11.1 MiB out
(511 KiB/s),25s
106,391 scanned, 76,229 removes, 6,298 rmdirs, 34.7 MiB in (1.39
MiB/s), 14.0
MiB out (590KiB/s), 30s
122,107 scanned, 93,203 removes, 7,448 rmdirs, 40.9 MiB in (1.24
MiB/s), 16.9
MiB out (606KiB/s), 35s
134,633 scanned, 109,815 removes, 9,011 rmdirs, 46.5 MiB in (1.12
MiB/s), 20.0
MiB out (622KiB/s), 40s
134,633 scanned, 119,858 removes, 9,051 rmdirs, 47.9 MiB in (288
KiB/s), 21.4
MiB out (296KiB/s), 45s
134,633 scanned, 119,858 removes, 9,051 rmdirs, 47.9 MiB in (0/s), 21.4
MiB out (0/s), 50s
134,633 scanned, 121,524 removes, 9,307 rmdirs, 48.2 MiB in (51.7
KiB/s), 21.7
MiB out (49.5KiB/s), 55s
Xcp command : xcp delete <IP address of destination NFS
server>:/dest_vol134,633 scanned, 0 matched, 134,632 delete
```

```

items, 0 error
Speed : 48.7 MiB in (869 KiB/s), 22.2 MiB out
(396 KiB/s)Total Time : 57s.
STATUS : PASSED

```

下表列出了 `delete` 参数及其问题描述。

参数	Description
<<nfs_delete_match,删除-匹配过滤器	仅处理与筛选器匹配的文件和目录。
删除-force	删除而不进行确认。
删除-vmetopdir	删除目录、包括子目录。
<<nfs_delete_exclude,删除-排除(); 过滤器();	排除与筛选器匹配的文件和目录。
<<nfs_delete_parallel,删除-并行(); n	指定最大并发批处理进程数(默认值: 7)。
删除-保留访问时间	保留文件或目录的访问时间(默认值: false)。
<<nfs_delete_loglevel,删除-loglevel (); 名称和gt;	设置日志级别; 可用级别为info、debug (默认值: info)。
删除-s3.insecure	提供使用HTTP而非HTTPS进行S3存储分段通信的选项。
<<nfs_delete_endpoint,删除-s3.endpoint	使用为S3存储分段通信指定的URL覆盖默认Amazon Web Services (AWS)端点URL。
<<nfs_delete_s3_profile,删除-s3.profile (); pro_name	从AWS凭据文件中指定用于S3存储分段通信的配置文件。
删除-s3.noverify	覆盖S3存储分段通信的SSL证书的默认验证。

删除-match <filter>

使用 `-match <filter>` 参数 `delete` 命令以仅处理与筛选器匹配的文件和目录。

语法

```
xcp delete -match <filter> <NFS export path>
```

显示示例

```
[root@client1 linux]# ./xcp delete -match "fnm('XCP_copy_2023-04-25_05.51.28.315997')" 10.101.10.101:/xcp_catalog

Job ID: Job_2023-04-25_06.10.29.637371_delete
WARNING: You have selected 10.101.10.101:/xcp_catalog for removing
data. Data in this path
/xcp_catalog will be deleted.
Are you sure you want to delete (yes/no): yes
Recursively removing data in 10.101.10.101:/xcp_catalog ...
Xcp command : xcp delete -match fnm('XCP_copy_2023-04-25_05.51.28.315997')
10.101.10.101:/xcp_catalog
Stats : 209 scanned, 14 matched, 12 removes, 2 rmdirs
Speed : 58.9 KiB in (18.6 KiB/s), 8.25 KiB out (2.60 KiB/s)
Total Time : 3s.
Job ID : Job_2023-04-25_06.10.29.637371_delete
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-04-25_06.10.29.637371_delete.log
STATUS : PASSED
```

删除-force

使用 `-force` 参数 `delete` 命令删除而不进行确认。

语法

```
xcp delete -force <NFS export path>
```

显示示例

```
[root@client1 linux]# ./xcp delete -force
10.101.10.101:/xcp_catalog/catalog/indexes/XCP_copy_2023-04-
25_05.53.58.273910

Job ID: Job_2023-04-25_06.11.30.584440_delete
WARNING: You have selected
10.101.10.101:/xcp_catalog/catalog/indexes/XCP_copy_2023-04-
25_05.53.58.273910 for removing data. Data in this path
/xcp_catalog/catalog/indexes/XCP_copy_2023-04-25_05.53.58.273910 will
be deleted.
Recursively removing data in
10.101.10.101:/xcp_catalog/catalog/indexes/XCP_copy_2023-04-
25_05.53.58.273910 ...
Xcp command : xcp delete -force
110.101.10.101:/xcp_catalog/catalog/indexes/XCP_copy_2023-04-
25_05.53.58.273910
Stats : 14 scanned, 12 removes, 1 rmdir
Speed : 6.44 KiB in (4.73 KiB/s), 3.59 KiB out (2.64 KiB/s)
Total Time : 1s.
Job ID : Job_2023-04-25_06.11.30.584440_delete
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-04-
25_06.11.30.584440_delete.log
STATUS : PASSED
[root@client-1 linux] #
```

删除-vmetopdir

使用 `-removetopdir` 参数 `delete` 命令以删除目录、包括子目录。

语法

```
xcp delete -force -loglevel <name> -removetopdir <NFS export path>
```


显示示例

```
[root@client1 linux]# ./xcp delete -force -loglevel DEBUG -removetopdir
10.101.10.101:/temp7/user9

Job ID: Job_2023-04-25_08.03.38.218893_delete
WARNING: You have selected 10.101.10.101:/temp7/user9 for removing
data. Data in this path
/temp7/user9 will be deleted.
Recursively removing data in 10.101.10.101:/temp7/user9 ...
50,500 scanned, 16,838 removes, 11.5 MiB in (2.27 MiB/s), 2.70 MiB out
(547 KiB/s), 5s
85,595 scanned, 43,016 removes, 21.5 MiB in (1.97 MiB/s), 6.70 MiB out
(806 KiB/s), 10s
.
.
.
1.01M scanned, 999,771 removes, 1,925 rmdirs, 324 MiB in (1.42 MiB/s),
153 MiB out (922
KiB/s), 3m6s

Xcp command : xcp delete -force -loglevel DEBUG -removetopdir
10.101.10.101:/temp7/user9
Stats : 1.01M scanned, 1.01M removes, 2,041 rmdirs
Speed : 326 MiB in (1.73 MiB/s), 155 MiB out (842 KiB/s)
Total Time : 3m8s.
Job ID : Job_2023-04-25_08.03.38.218893_delete
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-04-
25_08.03.38.218893_delete.log
STATUS : PASSED
[root@client1 linux]#
```

删除-排除<filter>

使用 `-exclude <filter>` 参数 `delete` 命令以排除与筛选器匹配的文件和目录。

语法

```
xcp delete -force -exclude <filter> <NFS export path>
```

显示示例

```
[root@client1 linux]# ./xcp delete -force -exclude "fnm('USER5')"  
10.101.10.101:/temp7/user2/  
  
Job ID: Job_2023-04-25_07.54.25.241216_delete  
WARNING: You have selected 10.101.10.101:/temp7/user2 for removing  
data. Data in this path  
/temp7/user2 will be deleted.  
Recursively removing data in 10.101.10.101:/temp7/user2 ...  
29,946 scanned, 1 excluded, 6,492 removes, 977 rmdirs, 7.42 MiB in  
(1.48 MiB/s), 1.54 MiB out  
(316 KiB/s), 5s  
Xcp command : xcp delete -force -exclude fnm('USER5')  
10.101.10.101:/temp7/user2/  
Stats : 29,946 scanned, 1 excluded, 28,160 removes, 1,785 rmdirs  
Speed : 10.6 MiB in (1.18 MiB/s), 5.03 MiB out (574 KiB/s)  
Total Time : 8s.  
Job ID : Job_2023-04-25_07.54.25.241216_delete  
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-04-  
25_07.54.25.241216_delete.log  
STATUS : PASSED  
[root@client1 linux]#
```

删除-par行并行<n>

使用 `-parallel <n>` 参数 `delete` 命令以指定并发批处理进程的最大数量。默认值为7。

语法

```
xcp delete -force -parallel <n> -match <filter> <NFS export path>
```

显示示例

```
[root@client1 linux]# ./xcp delete -force -parallel 8 -match
"fnm('2023-04-25_05.49.26.733160*')" 10.101.10.101:/xcp_catalog/

Job ID: Job_2023-04-25_06.15.27.024987_delete
WARNING: You have selected 10.101.10.101:/xcp_catalog for removing
data. Data in this path /xcp_catalog will be deleted.
Recursively removing data in 10.101.10.101:/xcp_catalog ...
Xcp command : xcp delete -force -parallel 8 -match fnm('2023-04-
25_05.49.26.733160*')
10.101.10.101:/xcp_catalog/
Stats : 182 scanned, 1 matched, 1 remove
Speed : 50.0 KiB in (115 KiB/s), 5.45 KiB out (12.5 KiB/s)
Total Time : 0s.
Job ID : Job_2023-04-25_06.15.27.024987_delete
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-04-
25_06.15.27.024987_delete.log
STATUS : PASSED
[root@client1 linux]#
```

删除-数据-地

使用 `-preserve-atime <preserve-atime>` 参数 `delete` 命令以保留文件或目录的访问时间。默认值为 `false`。

语法

```
xcp delete -force -preserve-atime <NFS export path>
```

显示示例

```
[root@client1 linux]# ./xcp delete -force -preserve-ctime
<IP_address>:/temp7/user2/

Job ID: Job_2023-04-25_07.55.30.972162_delete
WARNING: You have selected <IP_address>:/temp7/user2 for removing data.
Data in this path
/temp7/user2 will be deleted.
Recursively removing data in <IP_address>:/temp7/user2 ...
Xcp command : xcp delete -force -preserve-ctime
<IP_address>:/temp7/user2/
Stats : 256 scanned, 255 rmdirs
Speed : 199 KiB in (108 KiB/s), 75.7 KiB out (41.1 KiB/s)
Total Time : 1s.
Job ID : Job_2023-04-25_07.55.30.972162_delete
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-04-
25_07.55.30.972162_delete.log
STATUS : PASSED
[root@client-1 linux]#
```

删除-loglevel <name>

使用 `-loglevel <name>` 参数 `delete` 用于设置日志级别的命令；可用级别为 `info` 和 `debug`。默认级别为 `info`。

语法

```
xcp delete -force -loglevel DEBUG -removetopdir <NFS export path>
```

显示示例

```
[root@client1 linux]# ./xcp delete -force -loglevel DEBUG -removetopdir
10.101.10.101:/temp7/user9

Job ID: Job_2023-04-25_08.03.38.218893_delete
WARNING: You have selected 10.101.10.101:/temp7/user9 for removing
data. Data in this
path /temp7/user9 will be deleted.
Recursively removing data in 10.101.10.101:/temp7/user9 ...
50,500 scanned, 16,838 removes, 11.5 MiB in (2.27 MiB/s), 2.70 MiB out
(547 KiB/s), 5s
85,595 scanned, 43,016 removes, 21.5 MiB in (1.97 MiB/s), 6.70 MiB out
(806 KiB/s),
10s
.
.
.
1.01M scanned, 999,771 removes, 1,925 rmdirs, 324 MiB in (1.42 MiB/s),
153 MiB out
(922 KiB/s), 3m6s
Xcp command : xcp delete -force -loglevel DEBUG -removetopdir
10.101.10.101:/temp7/user9
Stats : 1.01M scanned, 1.01M removes, 2,041 rmdirs
Speed : 326 MiB in (1.73 MiB/s), 155 MiB out (842 KiB/s)
Total Time : 3m8s.
Job ID : Job_2023-04-25_08.03.38.218893_delete
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-04-
25_08.03.38.218893_delete.log
STATUS : PASSED
[root@client-1 linux]#
```

删除-s3.insecure

使用 `-s3.insecure` 参数 `delete` 用于使用HTTP而非HTTPS进行S3存储分段通信的命令。

语法

```
xcp delete -s3.insecure s3://bucket1
```

显示示例

```
[root@client1 linux]# ./xcp delete -s3.insecure s3:// bucket1

Job ID: Job_2023-06-08_08.51.40.849991_delete
WARNING: You have selected s3://bucket1 for removing data. Data in this
path //bucket1 will be
deleted.
Are you sure you want to delete (yes/no): yes
Recursively removing data in s3://bucket1 ...
Xcp command : xcp delete -s3.insecure s3://bucket1
Stats : 8 scanned, 6 s3.objects, 6 s3.removed
Speed : 0 in (0/s), 0 out (0/s)
Total Time : 5s.
Job ID : Job_2023-06-08_08.51.40.849991_delete
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-06-
08_08.51.40.849991_delete.log
STATUS : PASSED
```

删除-s3.Endpoint <s3_endpoint_url>

使用 `-s3.endpoint <s3_endpoint_url>` 参数 `delete` 命令以使用指定的URL覆盖默认AWS端点URL以进行S3存储分段通信。

语法

```
xcp delete -s3.endpoint https://<endpoint_url>: s3://bucket
```

显示示例

```
[root@client1 linux]# ./xcp delete -s3.endpoint https://<endpoint_url>:
s3://xcp-testing

Job ID: Job_2023-06-13_11.39.33.042545_delete
WARNING: You have selected s3://xcp-testing for removing data. Data in
this path //xcp-testing
will be deleted.
Are you sure you want to delete (yes/no): yes
Recursively removing data in s3://xcp-testing ...
Xcp command : xcp delete -s3.endpoint https://<endpoint_url>: s3://xcp-
testing
Stats : 8 scanned, 5 s3.objects, 5 s3.removed
Speed : 0 in (0/s), 0 out (0/s)
Total Time : 4s.
Job ID : Job_2023-06-13_11.39.33.042545_delete
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-06-
13_11.39.33.042545_delete.log
STATUS : PASSED
```

删除-s3.profile <name>

使用 s3.profile 参数 delete 命令以从AWS凭据文件指定用于S3存储分段通信的配置文件。

语法

```
xcp delete -s3.profile sg -s3.endpoint https://<endpoint_url>:
s3://bucket
```

显示示例

```
[root@client1 linux]# ./xcp delete -s3.profile sg -s3.endpoint
https://<endpoint_url>: s3://bucket

Job ID: Job_2023-06-08_08.53.19.059745_delete
WARNING: You have selected s3://bucket for removing data. Data in this
path //bucket will be deleted.
Are you sure you want to delete (yes/no): yes
Recursively removing data in s3://bucket ...
1 scanned, 0 in (0/s), 0 out (0/s), 5s
Xcp command : xcp delete -s3.profile sg -s3.endpoint
https://<endpoint_url>: s3:/ bucket
Stats : 7 scanned, 5 s3.objects, 5 s3.removed
Speed : 0 in (0/s), 0 out (0/s)
Total Time : 9s.
Job ID : Job_2023-06-08_08.53.19.059745_delete
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-06-
08_08.53.19.059745_delete.log
STATUS : PASSED
```

删除-s3.noverify

使用 `-s3.noverify` 参数 `delete` 用于覆盖S3存储分段通信的SSL认证默认验证的命令。

语法

```
xcp delete -s3.noverify s3://bucket
```


显示示例

```
[root@client-1 linux]# ./xcp delete -s3.noverify s3://bucket1

Job ID: Job_2023-06-13_10.56.19.319076_delete
WARNING: You have selected s3://bucket1 for removing data. Data in this
path //bucket1 will be
deleted.
Are you sure you want to delete (yes/no): yes
Recursively removing data in s3://bucket1 ...
2,771 scanned, 0 in (0/s), 0 out (0/s), 5s
9,009 scanned, 9,005 s3.objects, 2,000 s3.removed, 0 in (0/s), 0 out
(0/s), 10s
Xcp command : xcp delete -s3.noverify s3://bucket1
Stats : 9,009 scanned, 9,005 s3.objects, 9,005 s3.removed
Speed : 0 in (0/s), 0 out (0/s)
Total Time : 15s.
Job ID : Job_2023-06-13_10.56.19.319076_delete
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-06-
13_10.56.19.319076_delete.log
STATUS : PASSED
```

估计数

XCP NFS estimate 命令用于估计完成从源到目标的基线复制所需的时间。它会使用所有当前可用的系统资源(例如CPU、RAM、网络和其他参数)来计算完成基线复制的估计时间。您可以使用 `-target` 用于启动样本复制操作并获取估计时间的选项。

语法

```
xcp estimate -id <name>
```

显示示例

```
[root@client-01 linux]# ./xcp estimate -t 100 -id estimate01 -target
10.101.10.10:/temp8

xcp: WARNING: your license will expire in less than 10 days! You can
renew your license at https://xcp.netapp.com
Job ID: Job_2023-04-12_08.09.16.126908_estimate
Starting live test for 1m40s to estimate time to copy
'10.101.10.10:/temp4' to
'10.101.10.10:/temp8'...
estimate regular file copy task completed before the 1m40s duration
0 in (0/s), 0 out (0/s), 5s
0 in (0/s), 0 out (0/s), 10s
Estimated time to copy '10.101.12.11:/temp4' to '10.101.12.10:/temp8'
based on a 1m40s live test:
5.3s
Xcp command : xcp estimate -t 100 -id estimate01 -target
10.101.12.10:/temp8
Estimated Time : 5.3s
Job ID : Job_2023-04-12_08.09.16.126908_estimate
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-04-
12_08.09.16.126908_estimate.log
STATUS : PASSED
[root@client-01linux]#
```

下表列出了 `estimate` 参数及其问题描述。

参数	Description
<<nfs_estimate_id,估计-id	指定上一个副本或扫描索引的目录名称。
<<nfs_estimate_gbit,估计值-Gbit	使用千兆位带宽来估计最佳情形时间(默认值: 1)。
<<nfs_estimate_target,估计-目标(); 路径();	指定用于实时测试副本的目标。
<<nfs_estimate_t,估计值-t (); n/s/m/h]	指定实时测试副本的持续时间(默认值: 5米)。
<<nfs_estimate_bs,估计值-BS [k]	指定读/写块大小(默认值: 64K)。
<<nfs_estimate_dircount,估计值-dircount (); n[k]	指定读取目录的请求大小(默认值: 64K)。
估计值-保留时间	保留文件或目录的访问时间(默认值: false)。
<<nfs_estimate_loglevel,估计-日志级别(); 名称和gt;	设置日志级别; 可用级别为info、debug (默认值: info)

Estimate -id <name>

使用 `-id <name>` 参数 `estimate` 命令以排除与筛选器匹配的文件和目录。

语法

```
xcp estimate -id <name>
```

显示示例

```
[root@client1 linux]# ./xcp estimate -id csdata01

xcp: WARNING: your license will expire in less than 11 days! You can
renew your license at
https://xcp.netapp.com
xcp: WARNING: XCP catalog volume is low on disk space: 99.99% used,
62.0 MiB free space.
Job ID: Job_2023-04-20_12.59.31.260914_estimate
== Best-case estimate to copy `data-set:/userlgiven 1 gigabit of
bandwidth ==
112 TiB of data at max 128 MiB/s: at least 10d13h
Xcp command : xcp estimate -id csdata01
Estimated Time : 10d13h
Job ID : Job_2023-04-20_12.59.31.260914_estimate
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-04-
20_12.59.31.260914_estimate.log
STATUS : PASSED
xcp: WARNING: XCP catalog volume is low on disk space: 99.99% used,
62.0 MiB free space.
[root@client1 linux]#
```

估计-Gbit <n>

使用 `-gbit <n>` 参数 `estimate` 用于估计最佳情形时间的命令(默认值: 1)。此选项不能与结合使用 `-target` 选项

语法

```
xcp estimate -gbit <n> -id <name>
```

显示示例

```
[root@client-01 linux]# ./xcp estimate -gbit 10 -id estimate01

xcp: WARNING: your license will expire in less than 10 days! You can
renew your license at
https://xcp.netapp.com
Job ID: Job_2023-04-12_08.12.28.453735_estimate
== Best-case estimate to copy '10.101.12.11:/temp4' given 10 gigabits
of bandwidth ==
0 of data at max 1.25 GiB/s: at least 0.0s
Xcp command : xcp estimate -gbit 10 -id estimate01
Estimated Time : 0.0s
Job ID : Job_2023-04-12_08.12.28.453735_estimate
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-04-
12_08.12.28.453735_estimate.log
STATUS : PASSED
[root@client-01linux]#
```

估计-目标<path>

使用 `-target <path>` 参数 `estimate` 用于指定用于实时测试副本的目标的命令。

语法

```
xcp estimate -t 100 -id <name> -target <path>
```

显示示例

```
[root@client-01 linux]# ./xcp estimate -t 100 -id estimate01 -target
10.101.12.11:/temp8

xcp: WARNING: your license will expire in less than 10 days! You can
renew your license at https://xcp.netapp.com
Job ID: Job_2023-04-12_08.09.16.126908_estimate
Starting live test for 1m40s to estimate time to copy
'10.101.12.11:/temp4' to '10.101.12.11:/temp8'...
estimate regular file copy task completed before the 1m40s duration
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-04-
12_08.09.16.126908_estimate.log
STATUS : PASSED
[root@client-01linux]#
```

估计-t <n[s|m|h]>

使用 -t <n[s|m|h]> 参数 estimate 命令以指定实时测试副本的持续时间。默认值为5米。

语法

```
xcp estimate -t <n[s|m|h]> -id <name> -target <path>
```

显示示例

```
[root@client-01 linux]# ./xcp estimate -t 100 -id estimate01 -target
10.101.12.12:/temp8

xcp: WARNING: your license will expire in less than 10 days! You can
renew your license at
https://xcp.netapp.com
Job ID: Job_2023-04-12_08.09.16.126908_estimate
Starting live test for 1m40s to estimate time to copy
'10.101.12.11:/temp4' to
'10.101.12.12:/temp8'...
estimate regular file copy task completed before the 1m40s duration
0 in (0/s), 0 out (0/s), 5s
0 in (0/s), 0 out (0/s), 10s
Estimated time to copy '10.101.12.11:/temp4' to '10.101.12.12:/temp8'
based on a 1m40s live
test: 5.3s

Xcp command : xcp estimate -t 100 -id estimate01 -target
10.101.12.11:/temp8
Estimated Time : 5.3s
Job ID : Job_2023-04-12_08.09.16.126908_estimate
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-04-
12_08.09.16.126908_estimate.log
STATUS : PASSED
[root@client-01linux]#
```

估计值-BS <n[k]>

使用 -bs <n[k]> 参数 estimate 命令以指定读/写块大小。默认值为64k。

语法

```
xcp estimate -id <name> -bs <n[k]>
```

显示示例

```
[root@client1 linux]# ./xcp estimate -id estimate01 -bs 128k

xcp: WARNING: your license will expire in less than 7 days! You can
renew your license at
https://xcp.netapp.com
Job ID: Job_2023-04-24_08.44.12.564441_estimate
63.2 KiB in (12.5 KiB/s), 2.38 KiB out (484/s), 5s
== Best-case estimate to copy 'xxx' given 1 gigabit of bandwidth ==
112 TiB of data at max 128 MiB/s: at least 10d13h
Xcp command : xcp estimate -id estimate01 -bs 128k
Estimated Time : 10d13h
Job ID : Job_2023-04-24_08.44.12.564441_estimate
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-04-
24_08.44.12.564441_estimate.log
STATUS : PASSED
[root@client1 linux]#
```

Estimate -dircount <n[k]>

使用 `-dircount <n[k]>` 参数 `estimate` 命令以指定读取目录所需的大小。默认值为64k。

语法

```
xcp estimate -id <name> -dircount <n[k]> -t <n> -target <path>
```

显示示例

```
[root@client1 linux]# ./xcp estimate -id csdata01 -dircount 128k -t 300
-target <path>

xcp: WARNING: your license will expire in less than 11 days! You can
renew your license at
https://xcp.netapp.com
xcp: WARNING: XCP catalog volume is low on disk space: 99.99% used,
61.6 MiB free space.
Job ID: Job_2023-04-20_13.03.46.820673_estimate
Starting live test for 5m0s to estimate time to copy `data-set:/user1
to `<path>`...
1,909 scanned, 126 copied, 2 giants, 580 MiB in (115 MiB/s), 451 MiB
out (89.5 MiB/s), 5s
1,909 scanned, 134 copied, 2 giants, 1.23 GiB in (136 MiB/s), 1015 MiB
out (112 MiB/s), 10s
1,909 scanned, 143 copied, 2 giants, 1.88 GiB in (131 MiB/s), 1.54 GiB
out (113 MiB/s), 15s
.
.
.
7,136 scanned, 2,140 copied, 4 linked, 8 giants, 33.6 GiB in (110
MiB/s), 32.4 GiB out (110
MiB/s), 4m57s
Sample test copy completed for, 300.03s
0 in (-7215675436.180/s), 0 out (-6951487617.036/s), 5m2s
2,186 scanned, 610 KiB in (121 KiB/s), 76.9 KiB out (15.3 KiB/s), 5m7s
Estimated time to copy `data-set:/user1to '10.01.12.11:/mapr11' based
on a 5m0s live test:
7d6h
Xcp command : xcp estimate -id csdata01 -dircount 128k -t 300 -target
10.101.12.11:/mapr11
Estimated Time : 7d6h
Job ID : Job_2023-04-20_13.03.46.820673_estimate
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-04-
20_13.03.46.820673_estimate.log
STATUS : PASSED
xcp: WARNING: XCP catalog volume is low on disk space: 99.99% used,
61.6 MiB free space.
[root@client1 linux]#
```

估计-并行<n>

使用 `-parallel <n>` 参数 `estimate` 命令以指定并发批处理进程的最大数量。默认值为7。

语法

```
xcp estimate -loglevel <name> -parallel <n> -id <name>
```

显示示例

```
[root@client1 linux]# ./xcp estimate -loglevel DEBUG -parallel 8 -id
estimate1

xcp: WARNING: your license will expire in less than 11 days! You can
renew your license at
https://xcp.netapp.com
Job ID: Job_2023-04-20_11.36.45.535209_estimate
== Best-case estimate to copy '10.10.101.10:/users009/xxx/mnt' given 1
gigabit of bandwidth ==
6.75 GiB of data at max 128 MiB/s: at least 54.0s
Xcp command : xcp estimate -loglevel DEBUG -parallel 8 -id estimate1
Estimated Time : 54.0s
Job ID : Job_2023-04-20_11.36.45.535209_estimate
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-04-
20_11.36.45.535209_estimate.log
STATUS : PASSED
[root@client1 linux]#
```

估计值-保留时间

使用 `-preserve-atime` 参数 `estimate` 命令以保留文件或目录的访问时间。默认值为 `false`。

语法

```
xcp estimate -loglevel <name> -preserve-atime -id <name>
```


显示示例

```
root@client1 linux]# ./xcp estimate -loglevel DEBUG -preserve-atime -id
estimate1

xcp: WARNING: your license will expire in less than 11 days! You can
renew your license at
https://xcp.netapp.com
Job ID: Job_2023-04-20_11.19.04.050516_estimate
== Best-case estimate to copy '10.10.101.10:/users009/xxx/mnt' given 1
gigabit of bandwidth
==
6.75 GiB of data at max 128 MiB/s: at least 54.0s
Xcp command : xcp estimate -loglevel DEBUG -preserve-atime -id
estimate1
Estimated Time : 54.0s
Job ID : Job_2023-04-20_11.19.04.050516_estimate
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-04-
20_11.19.04.050516_estimate.log
STATUS : PASSED
[root@client1 linux]#
```

估计值-日志级别<name>

使用 `-loglevel <name>` 参数 `estimate` 用于设置日志级别的命令；可用级别为`info`和`debug`。默认级别为`info`。

语法

```
xcp estimate -loglevel <name> -id <name>
```

显示示例

```
[root@client1 linux]# ./xcp estimate -loglevel DEBUG -parallel 8 -id estimate1

xcp: WARNING: your license will expire in less than 11 days! You can
renew your license at
https://xcp.netapp.com
Job ID: Job_2023-04-20_11.36.45.535209_estimate
== Best-case estimate to copy '10.10.101.10:/users009/xxx/mnt' given 1
gigabit of bandwidth ==
6.75 GiB of data at max 128 MiB/s: at least 54.0s
Xcp command : xcp estimate -loglevel DEBUG -parallel 8 -id estimate1
Estimated Time : 54.0s
Job ID : Job_2023-04-20_11.36.45.535209_estimate
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-04-
20_11.36.45.535209_estimate.log
STATUS : PASSED
[root@client1 linux]#
```

索引删除

NFS indexdelete 命令删除目录索引。

语法

```
xcp indexdelete
```

```
[root@client1 linux]# ./xcp indexdelete

Job ID: Job_2023-11-16_02.41.20.260166_indexdelete
=====
=====
Name Command Size Created Updated
=====
=====
isync_tcl_retry copy 996 KiB 15-Nov-2023 15-Nov-2023
isync_est_isync isync 1012 KiB 15-Nov-2023 15-Nov-2023
XCP_verify_2023-11-15_05.56.17.522428 verify 1016 KiB 15-Nov-2023 15-
Nov-2023
XCP_verify_2023-11-15_06.04.31.693517 verify 1.00 MiB 15-Nov-2023 15-
Nov-2023
isync_tcl_retry1 copy 988 KiB 15-Nov-2023 15-Nov-2023
XCP_verify_2023-11-15_09.02.46.973624 verify 988 KiB 15-Nov-2023 15-
Nov-2023
est001 isync 1012 KiB 15-Nov-2023 15-Nov-2023
XCP_verify_2023-11-15_09.37.24.179634 verify 0 15-Nov-2023 15-Nov-2023
albatch_error1 copy 368 KiB 15-Nov-2023 15-Nov-2023
XCP_verify_2023-11-15_09.45.53.104055 verify 360 KiB 15-Nov-2023 15-
Nov-2023
albatch_error2 isync 376 KiB 15-Nov-2023 15-Nov-2023
XCP_verify_2023-11-15_09.48.05.000473 verify 372 KiB 15-Nov-2023 15-
Nov-2023
blbatch_error1 copy 4.50 KiB 15-Nov-2023 15-Nov-2023
XCP_verify_2023-11-15_12.00.29.214479 verify 4.50 KiB 15-Nov-2023 15-
Nov-2023
blbatch_error2 isync 4.50 KiB 15-Nov-2023 15-Nov-2023
XCP_verify_2023-11-15_12.00.40.536687 verify 4.50 KiB 15-Nov-2023 15-
Nov-2023
XCP_verify_2023-11-15_12.27.08.055501 verify 4.50 KiB 15-Nov-2023 15-
Nov-2023
XCP_verify_2023-11-15_12.27.39.797020 verify 4.50 KiB 15-Nov-2023 15-
Nov-2023
XCP_verify_2023-11-15_12.52.29.408766 verify 4.50 KiB 15-Nov-2023 15-
Nov-2023
XCP_verify_2023-11-15_12.53.01.870109 verify 4.50 KiB 15-Nov-2023 15-
Nov-2023
clbatch_error1 copy 988 KiB 15-Nov-2023 15-Nov-2023
XCP_verify_2023-11-15_22.54.11.081944 verify 976 KiB 15-Nov-2023 15-
Nov-2023
clbatch_error2 isync 1020 KiB 15-Nov-2023 15-Nov-2023
```

```

XCP_verify_2023-11-15_23.19.44.158263 verify 1.00 MiB 15-Nov-2023 15-
Nov-2023
XCP_verify_2023-11-15_23.44.01.274732 verify 4.50 KiB 15-Nov-2023 15-
Nov-2023
clbatch_error132576 copy 992 KiB 16-Nov-2023 16-Nov-2023
clbatch_error227998 isync 1004 KiB 16-Nov-2023 16-Nov-2023
XCP_verify_2023-11-16_01.07.45.824516 verify 1012 KiB 16-Nov-2023 16-
Nov-2023
S3_index copy 52.5 KiB 16-Nov-2023 16-Nov-2023
S3_index1 copy 52.5 KiB 16-Nov-2023 16-Nov-2023
clbatch_error14383 copy 728 KiB 16-Nov-2023 16-Nov-2023
32 scanned, 941 KiB in (1.04 MiB/s), 48.8 KiB out (55.4 KiB/s), 0s.
WARNING: 31 indexes will be deleted permanently.
Are you sure you want to delete (yes/no): yes
Xcp command : xcp indexdelete
Stats : 466 scanned, 31 index deleted
Speed : 1.09 MiB in (216 KiB/s), 133 KiB out (25.8 KiB/s)
Total Time : 5s.
Job ID : Job_2023-11-16_02.41.20.260166_indexdelete
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-
16_02.41.20.260166_indexdelete.log
STATUS : PASSED
[root@client1 linux]#

```

下表列出了 `indexdelete` 参数及其问题描述。

参数	Description
<code><<nfs_indexdelete_match,indexdelete -匹配过滤器</code>	仅处理与筛选器匹配的文件和目录。
<code><<nfs_indexdelete_loglevel,indexdelete -loglevel () ; name</code>	设置日志级别；可用级别为info、debug (默认值: info)。

indexdelete -match <filter>

使用 `-match <filter>` 参数 `indexdelete` 命令以仅处理与筛选器匹配的文件和目录。

语法

```
xcp indexdelete -match <filter>
```

显示示例

```
[root@client1 linux]# ./xcp indexdelete -match "fnm('S3_index12')"  
  
Job ID: Job_2023-11-16_02.44.39.862423_indexdelete  
=====
```

Name	Command	Size	Created	Updated
S3_index12	copy	52.5 KiB	16-Nov-2023	16-Nov-2023

```
=====
```

5 scanned, 1 matched, 141 KiB in (121 KiB/s), 6.05 KiB out (5.20 KiB/s), 1s.
WARNING: 1 matched index will be deleted permanently.
Are you sure you want to delete (yes/no): yes
Xcp command : xcp indexdelete -match fnm('S3_index12')
Stats : 19 scanned, 1 matched, 1 index deleted
Speed : 146 KiB in (29.3 KiB/s), 8.59 KiB out (1.72 KiB/s)
Total Time : 4s.
Job ID : Job_2023-11-16_02.44.39.862423_indexdelete
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-16_02.44.39.862423_indexdelete.log
STATUS : PASSED
[root@client1 linux]#

indexdelete -loglevel <name>

使用 `-loglevel <name>` 参数 `indexdelete` 用于设置日志级别的命令；可用级别为 `info` 和 `debug`。默认级别为 `info`。

语法

```
xcp indexdelete -loglevel <name> -match <filter>
```

显示示例

```
root@client1 linux]# ./xcp indexdelete -loglevel DEBUG -match
"fnm('test*')"
```

```
Job ID: Job_2023-11-16_03.39.36.814557_indexdelete
=====
=====
Name Command Size Created Updated
=====
=====
testing scan 24.5 KiB 16-Nov-2023 16-Nov-2023
testingisync isync 12.5 KiB 16-Nov-2023 16-Nov-2023
5 scanned, 2 matched, 65.1 KiB in (61.1 KiB/s), 6.24 KiB out (5.85
KiB/s), 1s.
WARNING: 2 matched indexes will be deleted permanently.
Are you sure you want to delete (yes/no): yes
6 scanned, 2 matched, 65.1 KiB in (10.5 KiB/s), 6.39 KiB out (1.03
KiB/s), 7s
Xcp command : xcp indexdelete -loglevel DEBUG -match fnm('test*')
Stats : 32 scanned, 2 matched, 2 index deleted
Speed : 75.5 KiB in (10.3 KiB/s), 11.1 KiB out (1.52 KiB/s)
Total Time : 7s.
Job ID : Job_2023-11-16_03.39.36.814557_indexdelete
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-
16_03.39.36.814557_indexdelete.log
STATUS : PASSED
[root@client1 linux]#
```

iSync

查看XCP的说明、参数和示例 `isync` 命令、包括何时 `isync` 命令与结合使用 `estimate` 选项

iSync

XCP NFS `isync` 命令会比较源和目标、并同步目标上的差异、而不使用目录索引。

语法

```
xcp isync <source_ip_address>:/src <destination_ip_address>:/dest
```

显示示例

```
[root@client1 linux]# ./xcp isync <source_ip_address>:/src
<destination_ip_address>:/dest

Job ID: Job_2023-11-20_04.11.03.128824_isync
41,030 scanned, 935 MiB in (162 MiB/s), 4.23 MiB out (752 KiB/s), 6s
57,915 scanned, 2.10 GiB in (239 MiB/s), 10.00 MiB out (1.13 MiB/s),
11s
57,915 scanned, 3.20 GiB in (210 MiB/s), 14.6 MiB out (879 KiB/s), 16s
92,042 scanned, 4.35 GiB in (196 MiB/s), 21.6 MiB out (1.17 MiB/s), 22s
123,977 scanned, 5.70 GiB in (257 MiB/s), 29.6 MiB out (1.49 MiB/s),
27s
137,341 scanned, 6.75 GiB in (212 MiB/s), 36.0 MiB out (1.25 MiB/s),
32s
154,503 scanned, 8.00 GiB in (226 MiB/s), 43.0 MiB out (1.24 MiB/s),
38s
181,578 scanned, 36 copied, 8.68 GiB in (132 MiB/s), 49.7 MiB out (1.26
MiB/s), 43s
target scan completed: 181,656 scanned, 1,477 copied, 1 removed, 8.76
GiB in (200 MiB/s), 123 MiB
out (2.75 MiB/s), 44s.
181,907 scanned, 10,013 copied, 1 removed, 9.17 GiB in (95.3 MiB/s),
545 MiB out (95.2 MiB/s), 49s
Xcp command : xcp isync <source_ip_address>:/src
<destination_ip_address>:/dest
Stats : 1 removed, 181,907 scanned, 10,263 copied
Speed : 9.17 GiB in (190 MiB/s), 548 MiB out (11.1 MiB/s)
Total Time : 49s.
Job ID : Job_2023-11-20_04.11.03.128824_isync
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-
20_04.11.03.128824_isync.log
STATUS : PASSED
[root@client1 linux]
```

下表列出了 `isync` 参数及其问题描述。

参数	Description
<code>iSync -nocdata</code>	不检查数据。
<code>iSync -noatts</code>	不检查属性。
<code>iSync -nomods</code>	不检查文件修改时间。
<code><<nfs_isync_mtimewindow,iSync -mtiewindow (); s</code>	指定可接受的修改时间差以进行验证。

参数	Description
<<nfs_ismatch,iSync -匹配过滤器	仅处理与筛选器匹配的文件和目录。
<<nfs_ismatch_bs,iSync -BS [k]	指定读/写块大小(默认值: 64K)。
<<nfs_ismatch_parallel,iSync -并行(); n	指定并发批处理进程的最大数量(默认值: 7)。
<<nfs_ismatch_dircount,iSync -dircount (); n[k]	指定读取目录时的请求大小(默认为64k)。
<<nfs_ismatch_exclude,iSync -排除(); 过滤器();	排除与筛选器匹配的文件和目录。
<<nfs_ismatch_newid,iSync -newid (); 名称和gt;	指定新索引目录的目录名称。
<<nfs_ismatch_loglevel,iSync -loglevel (); 名称和gt;	设置日志级别; 可用级别为info、debug (默认值: info)。
iSync -保留-time	将源上的所有文件还原到上次访问的日期。
iSync -s3.insecure	提供使用HTTP而非HTTPS进行S3存储分段通信的选项。
<<nfs_ismatch_endpoint,iSync -s3.endpoint	使用为S3存储分段通信指定的URL覆盖默认Amazon Web Services (AWS)端点URL。
<<nfs_ismatch_s3_profile,iSync -s3.profile (); ; profile_name	从AWS凭据文件中指定用于S3存储分段通信的配置文件。
iSync -s3.noverify	覆盖S3存储分段通信的SSL证书的默认验证。

iSync -nocdata

使用 `-nocdata` 参数 `ismatch` 用于指定不检查数据的命令。

语法

```
xcp isync -nocdata <source_ip_address>:/source_vol
<destination_ip_address>:/dest_vol
```


显示示例

```
root@client1 linux]# ./xcp isync -nodata
<source_ip_address>:/source_vol<destination_ip_address>:/dest_vol

Job ID: Job_2023-11-16_22.47.20.930900_isync
11,301 scanned, 3.26 MiB in (414 KiB/s), 479 KiB out (59.5 KiB/s), 8s
28,644 scanned, 437 copied, 33.7 MiB in (5.39 MiB/s), 27.2 MiB out
(4.75 MiB/s), 13s
29,086 scanned, 1,001 copied, 58.2 MiB in (3.54 MiB/s), 51.8 MiB out
(3.55 MiB/s), 20s
29,490 scanned, 1,001 copied, 597 removed, 61.1 MiB in (592 KiB/s),
53.7 MiB out (375 KiB/s),
25s
98
.
.
.
43,391 scanned, 1,063 copied, 1,001 removed, 2.49 GiB in (115 MiB/s),
2.48 GiB out (115 MiB/s),
1m17s
43,391 scanned, 1,082 copied, 1,001 removed, 3.08 GiB in (119 MiB/s),
3.07 GiB out (119 MiB/s),
1m23s
43,391 scanned, 1,088 copied, 1,001 removed, 3.68 GiB in (122 MiB/s),
3.67 GiB out (122 MiB/s),
1m28s
Xcp command : xcp isync -nodata <source_ip_address>:/source_vol
<destination_ip_address>:/dest_vol
Stats : 1,001 removed, 43,391 scanned, 1,108 copied
Speed : 4.19 GiB in (46.7 MiB/s), 4.18 GiB out (46.5 MiB/s)
Total Time : 1m31s.
Job ID : Job_2023-11-16_22.47.20.930900_isync
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-
16_22.47.20.930900_isync.log
Error Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-
16_22.47.20.930900_isync.error
STATUS : PASSED
```

iSync -noatts

使用 `-noattrs` 参数 `isync` 用于指定不检查属性的命令。

语法

```
xcp isync -noattrs <source_ip_address>:/source_vol  
<destination_ip_address>:/dest_vol
```

显示示例

```
[root@client1 linux]# ./xcp isync -noattrs  
<source_ip_address>:/source_vol <destination_ip_address>:/dest_vol  
  
Job ID: Job_2023-11-16_22.49.22.056646_isync  
18,036 scanned, 940 MiB in (168 MiB/s), 2.67 MiB out (488 KiB/s), 5s  
30,617 scanned, 285 removed, 4.23 GiB in (666 MiB/s), 12.0 MiB out  
(1.82 MiB/s), 10s  
32,975 scanned, 746 removed, 6.71 GiB in (505 MiB/s), 18.3 MiB out  
(1.25 MiB/s), 15s  
34,354 scanned, 1,000 removed, 9.39 GiB in (543 MiB/s), 24.9 MiB out  
(1.32 MiB/s), 20s  
34,594 scanned, 1,000 removed, 12.1 GiB in (540 MiB/s), 31.2 MiB out  
(1.24 MiB/s), 26s  
36,142 scanned, 722 copied, 1,000 removed, 14.9 GiB in (540 MiB/s),  
73.7 MiB out (7.93 MiB/s),  
31s  
.  
.  
.  
42,496 scanned, 1,000 copied, 1,000 removed, 234 GiB in (716 MiB/s),  
582 MiB out (1.55 MiB/s),  
7m22s  
Xcp command : xcp isync -noattrs <<source_ip_address>>:/source_vol  
<destination_ip_address>:/dest_vol  
Stats : 1,000 removed, 42,496 scanned, 1,000 copied  
Speed : 234 GiB in (542 MiB/s), 583 MiB out (1.32 MiB/s)  
Total Time : 7m22s.  
Job ID : Job_2023-11-16_22.49.22.056646_isync  
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-  
16_22.49.22.056646_isync.log  
Error Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-  
16_22.49.22.056646_isync.error  
STATUS : PASSED
```

iSync -nomods

使用 `-nomods` 参数 `isync` 用于指定不检查文件修改时间的命令。

语法

```
isync -nomods <source_ip_address>:/source_vol  
<destination_ip_address>:/dest_vol
```

显示示例

```
[root@client1 linux]# ./xcp isync -nomodes  
<source_ip_address>:/source_vol <destination_ip_address>:/dest_vol  
  
Job ID: Job_2023-11-16_22.56.48.571392_isync  
13,897 scanned, 763 MiB in (152 MiB/s), 2.28 MiB out (463 KiB/s), 5s  
21,393 scanned, 148 removed, 4.81 GiB in (739 MiB/s), 12.5 MiB out  
(1.81 MiB/s), 11s  
28,517 scanned, 148 removed, 7.68 GiB in (578 MiB/s), 19.1 MiB out  
(1.31 MiB/s), 16s  
28,517 scanned, 148 removed, 10.7 GiB in (619 MiB/s), 26.3 MiB out  
(1.43 MiB/s), 21s  
29,167 scanned, 396 copied, 148 removed, 13.2 GiB in (434 MiB/s), 51.4  
MiB out (4.33 MiB/s), 27s  
.br/>.br/>.br/>42,790 scanned, 1,000 copied, 1,000 removed, 229 GiB in (641 MiB/s),  
571 MiB out (1.40 MiB/s),  
6m42s  
42,790 scanned, 1,000 copied, 1,000 removed, 232 GiB in (668 MiB/s),  
578 MiB out (1.46 MiB/s),  
6m47s  
Xcp command : xcp isync -nomods <source_ip_address>:/source_vol  
<destination_ip_address>:/dest_vol  
Stats : 1,000 removed, 42,790 scanned, 1,000 copied  
Speed : 234 GiB in (585 MiB/s), 583 MiB out (1.42 MiB/s)  
Total Time : 6m50s.  
Job ID : Job_2023-11-16_22.56.48.571392_isync  
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-  
16_22.56.48.571392_isync.log  
STATUS : PASSED
```

iSync -mtiewindow <s>

使用 `-mtiewindow <s>` 参数 `isync` 命令以指定可接受的修改时间差以进行验证。

语法

```
xcp isync -mtimewindow <s> <source_ip_address>:/source_vol  
<destination_ip_address>:/dest_vol
```

显示示例

```
[root@client1 linux]# ./xcp isync -mtimewindow 10
10.101.101.101:/source_vol 10.101.101.101:/dest_vol

Job ID: Job_2023-11-16_23.03.41.617300_isync

 23,154 scanned, 146 removed, 1.26 GiB in (247 MiB/s), 4.50 MiB out
(882 KiB/s), 5s

 29,587 scanned, 485 removed, 4.51 GiB in (659 MiB/s), 13.4 MiB out
(1.77 MiB/s), 10s

 29,587 scanned, 485 removed, 7.40 GiB in (590 MiB/s), 20.0 MiB out
(1.32 MiB/s), 16s

 32,712 scanned, 485 removed, 10.3 GiB in (592 MiB/s), 26.9 MiB out
(1.34 MiB/s), 21s

 33,712 scanned, 485 removed, 13.2 GiB in (578 MiB/s), 33.6 MiB out
(1.33 MiB/s), 26s

 33,712 scanned, 961 copied, 485 removed, 15.5 GiB in (445 MiB/s), 86.6
MiB out (9.89 MiB/s), 31s

.

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.

42,496 scanned, 1,000 copied, 1,000 removed, 233 GiB in (655 MiB/s),
581 MiB out (1.43 MiB/s), 7m11s

Xcp command : xcp isync -mtimewindow 10 -loglevel DEBUG
10.101.101.101:/source_vol 10.101.101.101:/dest_vol

Stats      : 1,000 removed, 42,496 scanned, 1,000 copied

Speed      : 234 GiB in (554 MiB/s), 583 MiB out (1.35 MiB/s)

Total Time : 7m12s.

Job ID     : Job_2023-11-16_23.03.41.617300_isync
```

```
Log Path      : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-16_23.03.41.617300_isync.log

Error Path    : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-16_23.03.41.617300_isync.error

STATUS       : PASSED
```

iSync -Match <filter>

使用 `-match <filter>` 参数 `isync` 命令以仅处理与筛选器匹配的文件和目录。

语法

```
xcp isync -match <filter> -id <name>
```

显示示例

```
[root@client1 linux]# ./xcp isync -match fnm("FILE_USER5*")
<source_ip_address>:/source_vol
<destination_ip_address>:/dest_vol
Job ID: Job_2023-11-16_23.25.03.734323_isync
24,006 scanned, 570 matched, 32.5 MiB in (5.31 MiB/s), 221 KiB out
(36.2 KiB/s), 6s
33,012 scanned, 570 matched, 34.2 MiB in (223 KiB/s), 237 KiB out (2.06
KiB/s), 14s
33,149 scanned, 572 matched, 275 MiB in (38.3 MiB/s), 781 KiB out (86.6
KiB/s), 20s
39,965 scanned, 572 matched, 276 MiB in (214 KiB/s), 812 KiB out (4.95
KiB/s), 27s
40,542 scanned, 572 matched, 276 MiB in (15.4 KiB/s), 818 KiB out (1.00
KiB/s), 32s
40,765 scanned, 1,024 matched, 1.88 GiB in (297 MiB/s), 4.51 MiB out
(682 KiB/s), 38s
target scan completed: 41,125 scanned, 1,055 matched, 1.88 GiB in (48.9
MiB/s), 4.51 MiB out
(117 KiB/s), 39s.
42,372 scanned, 1,206 matched, 4.26 GiB in (445 MiB/s), 9.92 MiB out
(1013 KiB/s), 43s
Filtered: 1206 matched, 41290 did not match
Xcp command : xcp isync -match fnm("FILE_USER5*")
<source_ip_address>:/source_vol
<destination_ip_address>:/dest_vol
Stats : 42,496 scanned, 1,206 matched
Speed : 6.70 GiB in (145 MiB/s), 15.4 MiB out (332 KiB/s)
Total Time : 47s.
Job ID : Job_2023-11-16_23.25.03.734323_isync
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-
16_23.25.03.734323_isync.log
STATUS : PASSED
```

iSync -BS <n[k]>

使用 `-bs <n[k]>` 参数 `isync` 命令以指定读/写块大小。默认块大小为64k。

语法

```
xcp isync -loglevel DEBUG -bs <n[k]> <source_ip_address>:/source_vol
<destination_ip_address>:/dest_vol
```

显示示例

```
root@client1 linux]# ./xcp isync -loglevel DEBUG -bs 32k
<source_ip_address>:/source_vol <destination_ip_address>:/dest_vol

Job ID: Job_2023-11-17_00.49.20.336389_isync
20,616 scanned, 1.62 GiB in (332 MiB/s), 8.23 MiB out (1.64 MiB/s), 5s
30,240 scanned, 4.55 GiB in (594 MiB/s), 22.4 MiB out (2.81 MiB/s), 10s
30,439 scanned, 7.47 GiB in (589 MiB/s), 35.6 MiB out (2.60 MiB/s), 15s
30,439 scanned, 10.5 GiB in (617 MiB/s), 49.5 MiB out (2.75 MiB/s), 20s
30,863 scanned, 1 copied, 13.3 GiB in (547 MiB/s), 62.7 MiB out (2.56
MiB/s), 25s
.
.
.
42,497 scanned, 71 copied, 227 GiB in (637 MiB/s), 5.12 GiB out (2.79
MiB/s), 6m40s
42,497 scanned, 71 copied, 229 GiB in (538 MiB/s), 5.13 GiB out (2.35
MiB/s), 6m45s
Xcp command : xcp isync -loglevel DEBUG -bs 32k
<source_ip_address>:/source_vol
<destination_ip_address>:/dest_vol
Stats : 42,497 scanned, 71 copied
Speed : 231 GiB in (579 MiB/s), 5.14 GiB out (12.9 MiB/s)
Total Time : 6m48s.
Job ID : Job_2023-11-17_00.49.20.336389_isync
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-
17_00.49.20.336389_isync.log
Error Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-
17_00.49.20.336389_isync.error
STATUS : PASSED
[root@client1 linux]#
```

iSync -par 并口

使用 `-parallel <n>` 参数 `isync` 命令以指定并发批处理进程的最大数量。默认值为7。

语法

```
xcp isync -parallel <n> <source_ip_address>:/source_vol
<destination_ip_address>:/dest_vol
```


显示示例

```
[root@client1 linux]# xcp isync -parallel 16
<source_ip_address>:/source_vol
<destination_ip_address>:/dest_vol

Job ID: Job_2023-11-16_23.25.57.058655_isync
21,279 scanned, 765 MiB in (104 MiB/s), 2.43 MiB out (337 KiB/s), 7s
30,208 scanned, 126 removed, 3.00 GiB in (461 MiB/s), 9.11 MiB out
(1.33 MiB/s), 12s
35,062 scanned, 592 removed, 6.01 GiB in (615 MiB/s), 17.2 MiB out
(1.61 MiB/s), 17s
35,062 scanned, 592 removed, 7.35 GiB in (272 MiB/s), 20.3 MiB out (642
KiB/s), 22s
.
.
.
42,496 scanned, 1,027 copied, 1,027 removed, 231 GiB in (602 MiB/s),
576 MiB out (1.31 MiB/s),
7m40s
Xcp command : xcp isync -parallel 16 <source_ip_address>:/source_vol
<destination_ip_address>:/dest_vol
Stats : 1,027 removed, 42,496 scanned, 1,027 copied
Speed : 234 GiB in (515 MiB/s), 584 MiB out (1.26 MiB/s)
Total Time : 7m45s.
Job ID : Job_2023-11-16_23.25.57.058655_isync
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-
16_23.25.57.058655_isync.log
Error Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-
16_23.25.57.058655_isync.error
STATUS : PASSED
```

iSync -dircount <n[k]>

使用 `-dircount <n[k]>` 参数 `isync` 命令以指定读取目录时的请求大小。默认值为64k。

语法

```
xcp isync -dircount <n[k]> <source_ip_address>:/source_vol
<destination_ip_address>:/dest_vol
```

显示示例

```
root@client1 linux]# ./xcp isync -dircount 32k
<source_ip_address>:/source_vol
<destination_ip_address>:/dest_vol
Job ID: Job_2023-11-16_23.33.45.854686_isync
16,086 scanned, 824 MiB in (164 MiB/s), 2.75 MiB out (558 KiB/s), 5s
24,916 scanned, 4.42 GiB in (727 MiB/s), 12.5 MiB out (1.91 MiB/s), 11s
31,633 scanned, 237 removed, 7.19 GiB in (567 MiB/s), 19.0 MiB out
(1.30 MiB/s), 16s
31,633 scanned, 237 removed, 9.74 GiB in (512 MiB/s), 24.7 MiB out
(1.13 MiB/s), 21s
33,434 scanned, 237 removed, 11.6 GiB in (385 MiB/s), 29.3 MiB out (935
KiB/s), 26s
33,434 scanned, 499 copied, 237 removed, 13.1 GiB in (298 MiB/s), 57.7
MiB out (5.66 MiB/s), 31s
.
.
.
42,496 scanned, 1,000 copied, 1,000 removed, 229 GiB in (609 MiB/s),
572 MiB out (1.34 MiB/s),
7m3s
42,496 scanned, 1,000 copied, 1,000 removed, 232 GiB in (549 MiB/s),
578 MiB out (1.20 MiB/s),
7m8s
Xcp command : xcp isync -dircount 32k <source_ip_address>:/source_vol
<destination_ip_address>:/dest_vol
Stats : 1,000 removed, 42,496 scanned, 1,000 copied
Speed : 234 GiB in (555 MiB/s), 583 MiB out (1.35 MiB/s)
Total Time : 7m11s.
Job ID : Job_2023-11-16_23.33.45.854686_isync
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-
16_23.33.45.854686_isync.log
Error Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-
16_23.33.45.854686_isync.error
STATUS : PASSED
```

iSync -排除<filter>

使用 `-exclude <filter>` 参数 `isync` 命令以排除与筛选器匹配的文件和目录。

语法

```
xcp isync -exclude <filter> <source_ip_address>:/source_vol  
<destination_ip_address>:/dest_vol
```

显示示例

```
[root@client1 linux]# ./xcp isync -exclude fnm("FILE_USER5*")  
<source_ip_address>:/source_vol <destination_ip_address>:/dest_vol  
Job ID: Job_2023-11-16_23.41.00.713151_isync  
14,514 scanned, 570 excluded, 675 MiB in (133 MiB/s), 2.03 MiB out (411  
KiB/s), 5s  
24,211 scanned, 570 excluded, 4.17 GiB in (713 MiB/s), 11.0 MiB out  
(1.79 MiB/s), 10s  
30,786 scanned, 574 excluded, 116 removed, 7.07 GiB in (589 MiB/s),  
17.7 MiB out (1.32  
MiB/s), 15s  
30,786 scanned, 574 excluded, 116 removed, 10.1 GiB in (629 MiB/s),  
24.7 MiB out (1.40  
MiB/s), 20s  
31,106 scanned, 222 copied, 574 excluded, 116 removed, 12.8 GiB in (510  
MiB/s), 42.3 MiB out  
(3.33 MiB/s), 26s  
.br/>.br/>.br/>41,316 scanned, 1,000 copied, 1,206 excluded, 1,000 removed, 225 GiB in  
(616 MiB/s), 563 MiB  
out (1.36 MiB/s), 6m35s  
Excluded: 1206 excluded, 0 did not match exclude criteria  
Xcp command : xcp isync -exclude fnm("FILE_USER5*")  
<source_ip_address>:/source_vol <destination_ip_address>:/dest_vol  
Stats : 1,000 removed, 41,316 scanned, 1,000 copied, 1,206 excluded  
Speed : 227 GiB in (584 MiB/s), 568 MiB out (1.42 MiB/s)  
Total Time : 6m38s.  
Job ID : Job_2023-11-16_23.41.00.713151_isync  
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-  
16_23.41.00.713151_isync.log  
Error Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-  
16_23.41.00.713151_isync.error  
STATUS : PASSED
```

iSync -newid <name>

使用 `-newid <name>` 参数 `isync` 命令以指定新索引目录的目录名称。

语法

```
xcp isync -newid <name> -s3.endpoint <S3_endpoint_url>  
<source_ip_address>:/src/USER4 s3://isyncestimate/
```

显示示例

```
root@client1 linux]# ./xcp isync -newid testing -s3.endpoint  
<S3_endpoint_url> <source_ip_address>:/src/USER4 s3://isyncestimate/  
  
Job ID: Job_2023-11-16_04.33.32.381458_isync  
target scan completed: 502 scanned, 250 s3.objects, 251 indexed, 118  
KiB in (38.9 KiB/s), 63.7  
KiB out (20.9 KiB/s), 3s.  
Xcp command : xcp isync -newid testing -s3.endpoint S3_endpoint_url>  
<source_ip_address>:/src/USER4 s3://isyncestimate/  
Stats : 502 scanned, 250 s3.objects, 251 indexed  
Speed : 118 KiB in (38.8 KiB/s), 63.7 KiB out (20.9 KiB/s)  
Total Time : 3s.  
Job ID : Job_2023-11-16_04.33.32.381458_isync  
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-  
16_04.33.32.381458_isync.log  
STATUS : PASSED
```

iSync -loglevel <name>

使用 `-loglevel <name>` 参数 `isync` 用于设置日志级别的命令；可用级别为info和debug。默认值为info。

语法

```
xcp isync -loglevel <name> -bs <n[k]> <source_ip_address>:/source_vol  
<destination_ip_address>:/dest_vol
```

显示示例

```
[root@client1 linux]# ./xcp isync -loglevel DEBUG -bs 32k
<source_ip_address>:/source_vol <destination_ip_address>:/dest_vol

Job ID: Job_2023-11-17_00.49.20.336389_isync
20,616 scanned, 1.62 GiB in (332 MiB/s), 8.23 MiB out (1.64 MiB/s), 5s
30,240 scanned, 4.55 GiB in (594 MiB/s), 22.4 MiB out (2.81 MiB/s), 10s
30,439 scanned, 7.47 GiB in (589 MiB/s), 35.6 MiB out (2.60 MiB/s), 15s
30,439 scanned, 10.5 GiB in (617 MiB/s), 49.5 MiB out (2.75 MiB/s), 20s
30,863 scanned, 1 copied, 13.3 GiB in (547 MiB/s), 62.7 MiB out (2.56
MiB/s), 25s
.
.
.
42,497 scanned, 71 copied, 227 GiB in (637 MiB/s), 5.12 GiB out (2.79
MiB/s), 6m40s
42,497 scanned, 71 copied, 229 GiB in (538 MiB/s), 5.13 GiB out (2.35
MiB/s), 6m45s
Xcp command : xcp isync -loglevel DEBUG -bs 32k
<source_ip_address>:/source_vol <destination_ip_address>:/dest_vol
Stats : 42,497 scanned, 71 copied
Speed : 231 GiB in (579 MiB/s), 5.14 GiB out (12.9 MiB/s)
Total Time : 6m48s.
Job ID : Job_2023-11-17_00.49.20.336389_isync
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-
17_00.49.20.336389_isync.log
Error Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-
17_00.49.20.336389_isync.error
STATUS : PASSED
```

iSync -保留-time

使用 `-preserve-atime` 参数 `isync` 命令将源上的所有文件还原到上次访问的日期。

语法

```
xcp isync -preserve-atime <source_ip_address>:/source_vol
<destination_ip_address>:/dest_vol
```

显示示例

```
[root@client1 linux]# ./xcp isync -preserve-ctime
<source_ip_address>:/source_vol <destination_ip_address>:/dest_vol

Job ID: Job_2023-11-17_01.31.26.077154_isync
21,649 scanned, 1.41 GiB in (260 MiB/s), 5.63 MiB out (1.01 MiB/s), 5s
32,034 scanned, 10.9 GiB in (400 MiB/s), 29.3 MiB out (925 KiB/s), 30s
33,950 scanned, 1 copied, 12.9 GiB in (399 MiB/s), 35.5 MiB out (1.24
MiB/s), 35s
33,950 scanned, 1 copied, 14.7 GiB in (361 MiB/s), 39.6 MiB out (830
KiB/s), 41s
.
.
.
42,499 scanned, 1 copied, 229 GiB in (623 MiB/s), 529 MiB out (1.37
MiB/s), 7m16s
42,499 scanned, 1 copied, 233 GiB in (719 MiB/s), 536 MiB out (1.56
MiB/s), 7m21s
Xcp command : xcp isync -preserve-ctime <source_ip_address>:/source_vol
<destination_ip_address>:/dest_vol
Stats : 42,499 scanned, 1 copied
Speed : 234 GiB in (541 MiB/s), 540 MiB out (1.22 MiB/s)
Total Time : 7m23s.
Job ID : Job_2023-11-17_01.31.26.077154_isync
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-
17_01.31.26.077154_isync.log
Error Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-
17_01.31.26.077154_isync.error
STATUS : PASSED
```

iSync -s3.insecure

使用 `-s3.insecure` 参数 `isync` 用于使用HTTP而非HTTPS进行S3存储分段通信的命令。

语法

```
xcp isync -newid <name> -s3.insecure -s3.endpoint <S3_endpoint_url>
<source_ip_address>:/src/USER4 s3://isyncestimate/
```

显示示例

```
[root@client1 linux]# ./xcp isync -newid testing2 -s3.insecure
-s3.endpoint <S3_endpoint_url> <source_ip_address>:/src/USER4
s3://isyncestimate/

Job ID: Job_2023-11-16_05.09.28.579606_isync
target scan completed: 502 scanned, 250 s3.objects, 118 KiB in (47.6
KiB/s), 50.8 KiB out (20.5
KiB/s), 2s.
Xcp command : xcp isync -newid testing2 -s3.insecure -s3.endpoint
<S3_endpoint_url> <source_ip_address>:/src/USER4 s3://isyncestimate/
Stats : 502 scanned, 250 s3.objects, 251 indexed
Speed : 118 KiB in (38.5 KiB/s), 63.8 KiB out (20.7 KiB/s)
Total Time : 3s.
Job ID : Job_2023-11-16_05.09.28.579606_isync
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-
16_05.09.28.579606_isync.log
STATUS : PASSED
[root@client1 linux]#
```

iSync -s3.Endpoint <s3_endpoint_url>

使用 `-s3.endpoint <s3_endpoint_url>` 参数 `isync` 命令以使用指定的URL覆盖默认AWS端点URL以进行S3存储分段通信。

语法

```
xcp isync -newid <name> -s3.noverify -s3.endpoint <endpoint_url>
<source_ip_address>:/src/USER4 s3://isyncestimate/
```

显示示例

```
root@client1 linux]# ./xcp isync -newid testing -s3.endpoint <S3-
endpoint_url> <source_ip_address>:/src/USER4 s3://isynceestimate/

Job ID: Job_2023-11-16_04.33.32.381458_isync
target scan completed: 502 scanned, 250 s3.objects, 251 indexed, 118
KiB in (38.9 KiB/s), 63.7 KiB
out (20.9 KiB/s), 3s.
Xcp command : xcp isync -newid testing -s3.endpoint S3-endpoint_url>
<source_ip_address>:/src/USER4 s3://isynceestimate/
Stats : 502 scanned, 250 s3.objects, 251 indexed
Speed : 118 KiB in (38.8 KiB/s), 63.7 KiB out (20.9 KiB/s)
Total Time : 3s.
Job ID : Job_2023-11-16_04.33.32.381458_isync
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-
16_04.33.32.381458_isync.log
STATUS : PASSED
```

iSync -s3.profile <name>

使用 `s3.profile` 参数 `isync` 命令以从AWS凭据文件指定用于S3存储分段通信的配置文件。

语法

```
xcp isync -s3.profile <name> -s3.endpoint <S3-endpoint_url>
<source_ip_address>:/src/USER4 s3://isynceestimate
```


显示示例

```
[root@client1 linux]# /xcp/linux/xcp isync -s3.profile s3_profile
-s3.endpoint <S3-endpoint_url> <source_ip_address>:/src/USER4
s3://isyncestimate

Job ID: Job_2023-11-16_05.29.21.279709_isync
target scan completed: 502 scanned, 250 s3.objects, 108 KiB in (46.5
KiB/s), 38.4 KiB out (16.5
KiB/s), 2s.
Xcp command : xcp isync -s3.profile s3_profile -s3. <S3-endpoint_url>
<source_ip_address>:/src/USER4 s3://isyncestimate
Stats : 502 scanned, 250 s3.objects
Speed : 108 KiB in (34.2 KiB/s), 38.4 KiB out (12.1 KiB/s)
Total Time : 3s.
Job ID : Job_2023-11-16_05.29.21.279709_isync
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-
16_05.29.21.279709_isync.log
STATUS : PASSED
[root@client1 linux]#
```

iSync -s3.noverify

使用 `-s3.noverify` 参数 `isync` 用于覆盖S3存储分段通信的SSL认证默认验证的命令。

语法

```
xcp isync -newid <name> -s3.noverify -s3.endpoint <endpoint_url>
<source_ip_address>:/src/USER4 s3://isyncestimate/
```

显示示例

```
root@client1 linux]# ./xcp isync -newid testing5 -s3.noverify
-s3.endpoint <endpoint_url> <source_ip_address>:/src/USER4
s3://isyncestimate/

Job ID: Job_2023-11-16_05.11.12.803441_isync
target scan completed: 502 scanned, 250 s3.objects, 118 KiB in (40.8
KiB/s), 50.8 KiB out (17.6
KiB/s), 2s.
Xcp command : xcp isync -newid testing5 -s3.noverify -s3.endpoint
<endpoint_url>
<source_ip_address>:/src/USER4 s3://isyncestimate/
Stats : 502 scanned, 250 s3.objects, 251 indexed
Speed : 118 KiB in (34.7 KiB/s), 63.8 KiB out (18.6 KiB/s)
Total Time : 3s.
Job ID : Job_2023-11-16_05.11.12.803441_isync
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-
16_05.11.12.803441_isync.log
STATUS : PASSED
[root@client1 linux]#
```

iSync估计

。 isync 命令可与结合使用 estimate 用于估计所需时间的选项 isync 命令以同步增量更改。。 -id 参数用于指定先前复制操作的目录名称。

语法

```
xcp isync estimate -id <name>
```



。 -id 参数是必需的 isync estimate 命令选项。

显示示例

```
[root@client1 linux]# ./xcp isync estimate -id <name>

Job ID: Job_2023-11-20_04.08.18.967541_isync_estimate
Index: aalbatch_error1 {source: <source_ip_address>:/src, target:
<destination_ip_address>:/dest}
30,611 scanned, 786 MiB in (141 MiB/s), 3.60 MiB out (661 KiB/s), 5s
45,958 scanned, 1.92 GiB in (223 MiB/s), 8.48 MiB out (939 KiB/s), 10s
53,825 scanned, 3.11 GiB in (216 MiB/s), 13.5 MiB out (912 KiB/s), 16s
67,260 scanned, 4.33 GiB in (231 MiB/s), 18.6 MiB out (961 KiB/s), 22s
81,328 scanned, 5.57 GiB in (253 MiB/s), 23.8 MiB out (1.05 MiB/s), 27s
85,697 scanned, 6.85 GiB in (241 MiB/s), 29.2 MiB out (1005 KiB/s), 32s
85,697 scanned, 8.14 GiB in (262 MiB/s), 34.5 MiB out (1.06 MiB/s), 37s
Xcp command : xcp isync estimate -id <name>
Estimated Time : 45.1s
Job ID : Job_2023-11-20_04.08.18.967541_isync_estimate
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-
20_04.08.18.967541_isync_estimate.log
Error Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-
20_04.08.18.967541_isync_estimate.error
STATUS : PASSED
```

下表列出了 `isync estimate` 参数及其问题描述。

参数	Description
<code>iSync估计值-无数据</code>	不检查数据。
<code>iSync估计值-noattnrs</code>	不检查属性。
<code>iSync估计值-nomods</code>	不检查文件修改时间。
<code><<nfs_isync_estimate_mtimewindow,iSync估计-mtimewindow (); s</code>	指定可接受的修改时间差以进行验证。
<code><<nfs_isync_estimate_match,iSync估计-匹配(); 筛选器(gt);</code>	仅处理与筛选器匹配的文件和目录。
<code><<nfs_isync_estimate_bs,iSync估计-BS [k]</code>	指定读/写块大小(默认值: 64K)。
<code><<nfs_isync_estimate_parallel,iSync估计-并行(); n</code>	指定并发批处理进程的最大数量(默认值: 7)。
<code><<nfs_isync_estimate_dircount,iSync估计-dircount (); n[k]</code>	指定读取目录时的请求大小(默认为64k)。
<code><<nfs_isync_estimate_exclude,iSync估计-排除(); 过滤器();</code>	排除与筛选器匹配的文件和目录。
<code><<nfs_isync_estimate_id,iSync估计-id</code>	指定上次复制操作的目录名称。

参数	Description
<<nfs_isync_estimate_loglevel,iSync估计-日志级别() ; 名称和gt;	设置日志级别; 可用级别为info、debug (默认值: info)。
iSync估计值-保留 时间	将源上的所有文件还原到上次访问的日期。
iSync估计值-s3.insecure	提供使用HTTP而非HTTPS进行S3存储分段通信的选项。
<<nfs_isync_estimate_endpoint,iSync估计-s3.endpoint	使用为S3存储分段通信指定的URL覆盖默认Amazon Web Services (AWS)端点URL。
<<nfs_isync_estimate_s3_profile,iSync -s3.profile () ; prolie_name	从AWS凭据文件中指定用于S3存储分段通信的配置文件。
iSync估计值-s3.noverify	覆盖S3存储分段通信的SSL证书的默认验证。

iSync估计值-无数据

使用 `-nodata` 带的参数 `isync estimate` 指定不检查数据。

语法

```
xcp isync estimate -nodata -id <name>
```

显示示例

```
[root@client1 linux]# ./xcp isync estimate -nodata -id <name>

Job ID: Job_2023-11-23_23.19.45.648691_isync_estimate
Index: isync_est {source: <source_ip_address>:/fg1, target:
<destination_ip_address>:/fv}
Xcp command : xcp isync estimate -nodata -id <name>
Estimated Time : 0.6s
Job ID : Job_2023-11-23_23.19.45.648691_isync_estimate
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-
23_23.19.45.648691_isync_estimate.log
STATUS : PASSED
```

iSync估计值-noattrrs

使用 `-noattrrs` 带的参数 `isync estimate` 指定不检查属性。

语法

```
xcp isync estimate -noattrrs -id <name>
```

显示示例

```
[root@client1 linux]# ./xcp isync estimate -noattrs -id <name>

Job ID: Job_2023-11-23_23.20.25.042500_isync_estimate
Index: isync_est {source: <source_ip_address>:/fg1, target:
<target_ip_address>:/fv}
Xcp command : xcp isync estimate -noattrs -id <name>
Estimated Time : 2.4s
Job ID : Job_2023-11-23_23.20.25.042500_isync_estimate
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-
23_23.20.25.042500_isync_estimate.log
STATUS : PASSED
```

iSync估计值-nomods

使用 `-nomods` 带的参数 `isync estimate` 指定不检查文件修改时间。

语法

```
xcp isync estimate -nomods -id <name>
```

显示示例

```
[root@client1 linux]# ./xcp isync -nomodes
<source_ip_address>:/source_vol <destination_ip_address>:/dest_vol

Job ID: Job_2023-11-16_22.56.48.571392_isync
13,897 scanned, 763 MiB in (152 MiB/s), 2.28 MiB out (463 KiB/s), 5s
21,393 scanned, 148 removed, 4.81 GiB in (739 MiB/s), 12.5 MiB out
(1.81 MiB/s), 11s
28,517 scanned, 148 removed, 7.68 GiB in (578 MiB/s), 19.1 MiB out
(1.31 MiB/s), 16s
28,517 scanned, 148 removed, 10.7 GiB in (619 MiB/s), 26.3 MiB out
(1.43 MiB/s), 21s
29,167 scanned, 396 copied, 148 removed, 13.2 GiB in (434 MiB/s), 51.4
MiB out (4.33 MiB/s), 27s
.
.
.
42,790 scanned, 1,000 copied, 1,000 removed, 229 GiB in (641 MiB/s),
571 MiB out (1.40 MiB/s),
6m42s
42,790 scanned, 1,000 copied, 1,000 removed, 232 GiB in (668 MiB/s),
578 MiB out (1.46 MiB/s),
6m47s
Xcp command : xcp isync -nomods <source_ip_address>:/source_vol
<destination_ip_address>:/dest_vol
Stats : 1,000 removed, 42,790 scanned, 1,000 copied
Speed : 234 GiB in (585 MiB/s), 583 MiB out (1.42 MiB/s)
Total Time : 6m50s.
Job ID : Job_2023-11-16_22.56.48.571392_isync
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-
16_22.56.48.571392_isync.log
STATUS : PASSED
```

iSync Estimate -mtimewindow <s>

使用 `-mtimewindow <s>` 带的参数 `isync estimate` 指定可接受的修改时间差以进行验证。

语法

```
xcp isync estimate -mtimewindow <s> -id <name>
```

显示示例

```
[root@client1 linux]# ./xcp isync estimate -mtimewindow 10 -id <name>

Job ID: Job_2023-11-16_01.47.05.139847_isync_estimate
Index: <name> {source: <source_ip_address>:/source_vol, target:
<destination_ip_address>:/dest_vol}
Xcp command : xcp isync estimate -mtimewindow 10 -id <name>
Estimated Time : 2m42s
Job ID : Job_2023-11-16_01.47.05.139847_isync_estimate
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-
16_01.47.05.139847_isync_estimate.log
Error Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-
16_01.47.05.139847_isync_estimate.error
STATUS : PASSED
```

iSync估计-匹配<filter>

使用 `-match <filter>` 带的参数 `isync estimate` 以仅处理与筛选器匹配的文件和目录。

语法

```
xcp isync estimate -match <filter> -id <name>
```

显示示例

```
[root@client1 linux]# ./xcp isync estimate -match <filter> -id <name>

Job ID: Job_2023-11-16_02.13.34.904794_isync_estimate
Index: <name> {source: <source_ip_address>:/source_vol, target:
<destination_ip_address>:/dest_vol}
Filtered: 0 matched, 6 did not match
Xcp command : xcp isync estimate -match fnm('FILE_*') -id <name>
Estimated Time : 0.8s
Job ID : Job_2023-11-16_02.13.34.904794_isync_estimate
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-
16_02.13.34.904794_isync_estimate.log
STATUS : PASSED
```

iSync估计-BS <n[k]>

使用 `-bs <n[k]>` 带的参数 `isync estimate` 指定读/写块大小。默认块大小为64k。

语法

```
xcp isync estimate -bs <n[k]> -id <name>
```

显示示例

```
[root@client1 linux]# ./xcp isync estimate -bs 128k -id <name>

Job ID: Job_2023-11-16_02.14.21.263618_isync_estimate
Index: <name> {source: <source_ip_address>:/source_vol, target:
<destination_ip_address>:/dest_vol}
Xcp command : xcp isync estimate -bs 128k -id <name>
Estimated Time : 6m48s
Job ID : Job_2023-11-16_02.14.21.263618_isync_estimate
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-
16_02.14.21.263618_isync_estimate.log
STATUS : PASSED
```

iSync估计-并行

使用 `-parallel <n>` 带的参数 `isync estimate` 指定并发批处理的最大数量。默认值为7。

语法

```
xcp isync estimate -parallel <n> -id <name>
```

显示示例

```
[root@client1 linux]# ./xcp isync estimate -parallel 10 -id <name>

Job ID: Job_2023-11-16_02.15.25.109554_isync_estimate
Index: <name> {source: <source_ip_address>:/source_vol, target:
<destination_ip_address>:/dest_vol}
Xcp command : xcp isync estimate -parallel 10 -id <name>
Estimated Time : 8m3s
Job ID : Job_2023-11-16_02.15.25.109554_isync_estimate
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-
16_02.15.25.109554_isync_estimate.log
STATUS : PASSED
```


iSync Estimate -dircount <n[k]>

使用 `-dircount <n[k]>` 带的参数 `isync estimate` 指定读取目录时的请求大小。默认值为64k。

语法

```
xcp isync estimate -dircount <n[k]> -id <name>
```

显示示例

```
[root@client1 linux]# ./xcp isync estimate -dircount 128k -id <name>

Job ID: Job_2023-11-16_02.15.56.200697_isync_estimate
Index: <name> {source: <source_ip_address>:/source_vol, target:
<destination_ip_address>:/dest_vol}
Xcp command : xcp isync estimate -dircount 128k -id <name>
Estimated Time : 8m6s
Job ID : Job_2023-11-16_02.15.56.200697_isync_estimate
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-
16_02.15.56.200697_isync_estimate.log
STATUS : PASSED
```

iSync估计-排除<filter>

使用 `-exclude <filter>` 带的参数 `isync estimate` 排除与筛选器匹配的文件和目录。

语法

```
xcp isync estimate -exclude <filter> -id <name>
```

显示示例

```
[root@client1 linux]# ./xcp isync estimate -exclude "fnm('DIR1*')" -id <name>

Job ID: Job_2023-11-16_02.16.30.449378_isync_estimate
Index: <name> {source: <source_ip_address>:/source_vol, target:
<destination_ip_address>:/dest_vol}
Excluded: 60 excluded, 0 did not match exclude criteria
Xcp command : xcp isync estimate -exclude fnm('DIR1*') -id <name>
Estimated Time : 3m29s
Job ID : Job_2023-11-16_02.16.30.449378_isync_estimate
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-
16_02.16.30.449378_isync_estimate.log
STATUS : PASSED
```

iSync估计-id <name>

使用 `-id <name>` 带的参数 `isync estimate` 在先前的复制操作中指定目录名称pf。

语法

```
xcp isync estimate -id <name>
```

显示示例

```
[root@client1 linux]# ./xcp isync estimate -id <name>

Job ID: Job_2023-11-20_04.08.18.967541_isync_estimate
Index: <name> {source: <source_ip_address>:/src, target:
<destination_ip_address>:/dest}
30,611 scanned, 786 MiB in (141 MiB/s), 3.60 MiB out (661 KiB/s), 5s
45,958 scanned, 1.92 GiB in (223 MiB/s), 8.48 MiB out (939 KiB/s), 10s
53,825 scanned, 3.11 GiB in (216 MiB/s), 13.5 MiB out (912 KiB/s), 16s
67,260 scanned, 4.33 GiB in (231 MiB/s), 18.6 MiB out (961 KiB/s), 22s
81,328 scanned, 5.57 GiB in (253 MiB/s), 23.8 MiB out (1.05 MiB/s), 27s
85,697 scanned, 6.85 GiB in (241 MiB/s), 29.2 MiB out (1005 KiB/s), 32s
85,697 scanned, 8.14 GiB in (262 MiB/s), 34.5 MiB out (1.06 MiB/s), 37s
Xcp command : xcp isync estimate -id <name>
Estimated Time : 45.1s
Job ID : Job_2023-11-20_04.08.18.967541_isync_estimate
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-
20_04.08.18.967541_isync_estimate.log
Error Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-
20_04.08.18.967541_isync_estimate.error
STATUS : PASSED
```

iSync Estimate -loglevel <name>

使用 `-loglevel <name>` 带的参数 `isync estimate` 设置日志级别；可用级别为`info`和`debug`。默认值为`info`。

语法

```
xcp isync estimate -loglevel <name> -id <name>
```

显示示例

```
[root@client1 linux]# ./xcp isync estimate -loglevel DEBUG -id <name>

Job ID: Job_2023-11-16_02.16.58.212518_isync_estimate
Index: <name> {source: <source_ip_address>:/source_vol, target:
<destination_ip_address>:/dest_vol}
Xcp command : xcp isync estimate -loglevel DEBUG -id <name>
Estimated Time : 8m18s
Job ID : Job_2023-11-16_02.16.58.212518_isync_estimate
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-
16_02.16.58.212518_isync_estimate.log
STATUS : PASSED
```

iSync估计值-保留 时间

使用 `-preserve-atime` 带的参数 `isync estimate` 将源上的所有文件还原到上次访问的日期。

语法

```
xcp isync estimate -preserve-atime -id <name>
```

显示示例

```
[root@client1 linux]# ./xcp isync estimate -preserve-atime -id <name>

Job ID: Job_2023-11-16_02.17.32.085754_isync_estimate
Index: <name> {source: <source_ip_address>:/source_vol, target:
<destination_ip_address>:/dest_vol}
Xcp command : xcp isync estimate -preserve-atime -id <name>
Estimated Time : 8m26s
Job ID : Job_2023-11-16_02.17.32.085754_isync_estimate
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-
16_02.17.32.085754_isync_estimate.log
STATUS : PASSED
```

iSync估计值-s3.insecure

使用 `-s3.insecure` 带的参数 `isync estimate` 使用HTTP而非HTTPS进行S3存储分段通信。

语法

```
xcp isync estimate -s3.insecure -id <name>
```

显示示例

```
[root@client1 linux]# ./xcp isync estimate -s3.insecure -id S3_index

Job ID: Job_2023-11-16_02.22.36.481539_isync_estimate
Index: S3_index {source: <source_ip_address>:/source_vol/USER5, target:
s3://
xcptesting/test_ankit/}
2,002 scanned, 432 KiB in (86.1 KiB/s), 5.53 KiB out (1.10 KiB/s), 5s
2,002 scanned, 432 KiB in (0/s), 5.53 KiB out (0/s), 10s
Xcp command : xcp isync estimate -s3.insecure -id S3_index
Estimated Time : 9.4s
Job ID : Job_2023-11-16_02.22.36.481539_isync_estimate
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-
16_02.22.36.481539_isync_estimate.log
STATUS : PASSED
```

iSync Estimate -s3.Endpoint <s3_endpoint_url>

使用 `-s3.endpoint <s3_endpoint_url>` 带的参数 `isync estimate` 使用指定的URL覆盖默认AWS端点URL以进行S3存储分段通信。

语法

```
xcp isync estimate -s3.endpoint <S3_endpoint_url> -id <name>
```

显示示例

```
[root@client1 linux]# ./xcp isync estimate -s3.endpoint
<S3_endpoint_url> -id S3_index1

Job ID: Job_2023-11-16_02.35.49.911194_isync_estimate
Index: S3_index1 {source: <source_ip_address>:/source_vol/USER5,
target: s3://isyncestimate/}
2,002 scanned, 432 KiB in (85.6 KiB/s), 5.54 KiB out (1.10 KiB/s), 5s
2,002 scanned, 432 KiB in (0/s), 5.54 KiB out (0/s), 10s
Xcp command : xcp isync estimate -s3.endpoint <S3_endpoint_url> -id
S3_index1
Estimated Time : 13.3s
Job ID : Job_2023-11-16_02.35.49.911194_isync_estimate
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-
16_02.35.49.911194_isync_estimate.log
STATUS : PASSED
```

iSync估计-s3.profile <name>

使用 s3.profile 带的参数 isync estimate 从AWS凭据文件中为S3存储分段通信指定配置文件。

语法

```
xcp isync estimate -s3.profile s3_profile -id <name>
```

显示示例

```
[root@client1 linux]# ./xcp isync estimate -s3.profile s3_profile -id S3_index

Job ID: Job_2023-11-16_02.25.57.045692_isync_estimate
Index: S3_index {source: <source_ip_address>:/source_vol/USER5, target: s3://xcptesting/test_ankit/}
2,002 scanned, 432 KiB in (84.9 KiB/s), 5.53 KiB out (1.09 KiB/s), 5s
2,002 scanned, 432 KiB in (0/s), 5.53 KiB out (0/s), 10s
Xcp command : xcp isync estimate -s3.profile s3_profile -id S3_index
Estimated Time : 9.7s
Job ID : Job_2023-11-16_02.25.57.045692_isync_estimate
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-16_02.25.57.045692_isync_estimate.log
STATUS : PASSED
```

iSync估计值-s3.noverify

使用 `-s3.noverify` 带的参数 `isync estimate` 覆盖S3存储分段通信的SSL认证的默认验证。

语法

```
xcp isync estimate -s3.noverify -id <name>
```

显示示例

```
[root@client1 linux]# ./xcp isync estimate -s3.noverify -id S3_index

Job ID: Job_2023-11-16_02.23.36.515890_isync_estimate
Index: S3_index {source: <source_ip_address>:/source_vol/USER5, target: s3://xcptesting/test_ankit/}
2,002 scanned, 432 KiB in (85.7 KiB/s), 5.53 KiB out (1.10 KiB/s), 5s
2,002 scanned, 432 KiB in (0/s), 5.53 KiB out (0/s), 10s
Xcp command : xcp isync estimate -s3.noverify -id S3_index
Estimated Time : 9.3s
Job ID : Job_2023-11-16_02.23.36.515890_isync_estimate
Log Path : /opt/NetApp/xFiles/xcp/xcplogs/Job_2023-11-16_02.23.36.515890_isync_estimate.log
STATUS : PASSED
```

SMB命令参考

帮助

SMB help command显示命令列表、命令参数以及每个命令的简要问题描述。此命令对于XCP新手非常有用。

语法

```
xcp --help
```

显示示例

```
C:\Users\Administrator\Desktop\xcp>xcp --help
usage: xcp [-h] [-version]

{scan,show,listen,configure,copy,sync,verify,license,activate,help}
    ...
optional arguments:
  -h, --help            show this help message and exit
  -version              show program's version number and exit

XCP commands:
  {scan,show,listen,configure,copy,sync,verify,license,activate,help}
  scan                  Read all the files in a file tree
  show                  Request information from host about SMB shares
  listen                Run xcp service
  configure             Configure xcp.ini file
  copy                  Recursively copy everything from source to target
  sync                  Sync target with source
  verify                Verify that the target is the same as the source
  license               Show xcp license info
  activate              Activate a license on the current host
  help                  Show help for commands
```

帮助<command>

将<command>与结合使用 help 显示指定<command>的示例和选项详细信息。

语法

```
xcp help <command>
```


以下示例输出显示了的详细信息、用法、参数和可选参数 `sync` 命令：



```

C:\Users\Administrator\Desktop\xcp>xcp help sync
usage: xcp sync [-h] [-v] [-parallel <n>] [-match <filter>] [-preserve-
atime]
[-noatime] [-noctime] [-nomtime] [-noattrs]
[-noownership] [-atimewindow <float>] [-ctimewindow <float>]
[-mtimewindow <float>] [-acl] [-fallback-user FALLBACK_USER]
[-fallback-group FALLBACK_GROUP] [-l]
source target
Note: ONTAP does not let a SMB client modify COMPRESSED or ENCRYPTED
attributes.
XCP sync will ignore these file attributes.
positional arguments:
source
target
optional arguments:
-h, --help            show this help message and exit
-v                    increase debug verbosity
-parallel <n>         number of concurrent processes (default: <cpu-
count>)
-match <filter>       only process files and directories that match the
filter
                        see `xcp help -match` for details)
-preserve-atime       restore last accessed date on source
-noatime              do not check file access time
-noctime              do not check file creation time
-nomtime              do not check file modification time
-noattrs              do not check attributes
-noownership          do not check ownership
-atimewindow <float> acceptable access time difference in seconds
-ctimewindow <float> acceptable creation time difference in seconds
-mtimewindow <float> acceptable modification time difference in
seconds
-acl                  copy security information
-fallback-user FALLBACK_USER
                        a user on the target machine to receive the
permissions of local
(nondomain)source machine users (eg. domain\administrator)
-fallback-group      FALLBACK_GROUP
                        a group on the target machine to receive the
permissions of local
(non-domain) source machine groups (eg. domain\administrators)
-l                    increase output
-root                 sync acl for root directory
C:\Users\Administrator\Desktop\xcp>

```

显示

SMB `show` 命令用于查询一个或多个存储服务器的RPC服务和NFS导出。命令还会列出可用服务和导出、以及每个导出的已用容量和可用容量、后跟每个导出的根属性。

语法

。 `show` 命令需要导出的NFSv3系统的主机名或IP地址：

```
xcp show \\<IP address or hostname of SMB server>
```

显示示例

```
C:\Users\Administrator\Desktop\xcp>xcp show \\<IP address or hostname
of SMB server>
Shares Errors Server
7 0 <IP address or hostname of SMB server>
== SMB Shares ==
Space Space Current
Free Used Connections Share Path Folder Path
0 0 N/A \\<IP address or hostname of SMB server>\IPC$ N/A
533GiB 4.72GiB 0 \\<IP address or hostname of SMB server>\ETC$ C:\etc
533GiB 4.72GiB 0 \\<IP address or hostname of SMB server>\HOME
C:\vol\vol0\home
533GiB 4.72GiB 0 \\<IP address or hostname of SMB server>\C$ C:\
972MiB 376KiB 0 \\<IP address or hostname of SMB
server>\testsecureC:\vol\testsecure
12 XCP SMB v1.6 User Guide © 2020 NetApp, Inc. All rights reserved.
47.8GiB 167MiB 1 \\<IP address or hostname of SMB server>\volxcp
C:\vol\volxcp
9.50GiB 512KiB 1 \\<IP address or hostname of SMB server>\jl C:\vol\jl
== Attributes of SMB Shares ==
Share Types Remark
IPC$ PRINTQ,IPC,SPECIAL,DEVICE Remote IPC
ETC$ SPECIAL Remote Administration
HOME DISKTREE Default Share
C$ SPECIAL Remote Administration
testsecure DISKTREE for secure copy
volxcp DISKTREE for xcpSMB
jl DISKTREE
== Permissions of SMB Shares ==
Share Entity Type
IPC$ Everyone Allow/Full Control
ETC$ Administrators Allow/FullControl
HOME Everyone Allow/Full Control
C$ Administrators Allow/Full Control

xcp show \\<IP address or hostname of SMB server>
0 errors
Total Time : 0s
STATUS : PASSED
```

下表列出了 show 参数及其问题描述。

参数	Description
show -v	使用IP地址或主机名输出有关SMB服务器的详细信息。
show -h、--help	显示有关如何使用命令的详细信息。

license

SMB license 命令可显示XCP许可证信息。

语法

```
xcp license
```

显示示例

```
C:\Users\Administrator\Desktop\xcp>xcp license
xcp license
XCP <version>; (c) yyyy NetApp, Inc.; Licensed to XXX [NetApp Inc]
until Mon Dec 31 00:00:00 yyyy
License type: SANDBOX
License status: ACTIVE
Customer name: N/A
Project number: N/A
Offline Host: Yes
Send statistics: No
Host activation date: N/A
License management URL: https://xcp.netapp.com
```

激活

SMB activate 命令可激活XCP许可证。运行此命令之前、请确认许可证文件已下载并复制到XCP主机或客户端计算机的C:\NetApp\XCP目录中。许可证可以在任意数量的主机上激活。

语法

```
xcp activate
```

显示示例

```
C:\Users\Administrator\Desktop\xcp>xcp activate
XCP activated
```

扫描

SMB scan 命令以递归方式扫描整个SMB共享、并在结尾列出所有文件 scan 命令：

语法

```
xcp scan \\<SMB share path>
```

显示示例

```
C:\Users\Administrator\Desktop\xcp>xcp scan \\<IP address or hostname
of SMB server>\volxcp
c:\netapp\xcp\xcp scan \\<IP address of SMB destination
server>\source_share
volxcp\3333.txt
volxcp\SMB.txt
volxcp\SMB1.txt
volxcp\com.txt
volxcp\commands.txt
volxcp\console.txt
volxcp\linux.txt
volxcp\net use.txt
volxcp\newcom.txt
volxcp\notepad.txt
c:\netapp\xcp\xcp scan \\<IP address of SMB destination
server>\source_share
60,345 scanned, 0 matched, 0 errors
Total Time : 8s
STATUS : PASSED
C:\Users\Administrator\Desktop\xcp>Parameters
```

下表列出了 scan 参数及其问题描述。

参数	Description
<code>scan -h</code> 、 <code>--help</code>	显示有关如何使用scan命令的详细信息。
<code>[扫描-v]</code>	增加调试详细信息。

参数	Description
<<smb_scan_parallel,扫描-并行(); n	指定并发进程的数量(默认值: <cpu-count>)。
<<smb_scan_match_filter,扫描-匹配过滤器	仅处理与筛选器匹配的文件和目录。
<<smb_scan_exclude_filter,扫描-排除(); 过滤器();	仅在筛选器中排除文件和目录。
[扫描-保留-环境]	还原源上上次访问的日期。
<<smb_scan_depth,扫描深度(); n	将搜索深度限制为n个级别。
[扫描-stats.]	以树统计信息报告格式列出文件。
[扫描-html]	以树统计HTML报告格式列出文件。
[扫描.csv]	以树统计CSV报告格式列出文件。
[扫描-l]	以长列表输出格式列出文件。
[扫描所有权]	检索源上文件和目录的所有权信息系统。
[扫描-du]	汇总每个目录(包括子目录)的空间使用量。
<<smb_scan_fmt,扫描-fmgt (); 表达式();	根据Python表达式设置文件列表的格式(请参见 xcp help -fmt 有关详细信息、请参见)。
扫描-ADS	以递归方式扫描整个SMB共享、并列出所有文件和任何关联的备用数据流。

scan -h、--help

使用 -h 和 --help 参数 scan 命令以显示有关如何使用scan命令的详细信息。

语法

```
xcp scan --help
```



```

C:\netapp\xcp>xcp scan --help

usage: xcp scan [-h] [-v] [-parallel <n>] [-match <filter>] [-exclude
<filter>] [-preserve-atime] [-depth
<n>] [-loglevel <name>] [-stats] [-l] [-ownership] [-du]
          [-fmt <expression>] [-html] [-csv] [-edupe] [-bs <n>]
[-ads]
          source
positional arguments:
  source
optional arguments:
  -h, --help            show this help message and exit
  -v                    increase debug verbosity
  -parallel <n>         number of concurrent processes (default: <cpu-
count>)
  -match <filter>       only process files and directories that match
the filter (see `xcp help -match` for details)
  -exclude <filter>     Exclude files and directories that match the
filter (see `xcp help -exclude` for details)
  -preserve-atime       restore last accessed date on source
  -depth <n>            limit the search depth
  -loglevel <name>     option to set log level filter (default:INFO)
  -stats                print tree statistics report
  -l                    detailed file listing output
  -ownership            retrieve ownership information
  -du                   summarize space usage of each directory
including subdirectories
  -fmt <expression>    format file listing according to the python
expression (see `xcp help -fmt` for details)
  -html                 Save HTML statistics report
  -csv                  Save CSV statistics report
  -edupe                Include dedupe and sparse data estimate in
reports (see documentation for details)
  -bs <n>               read/write block size for scans which read data
with -edupe (default: 64k)
  -ads                  scan NTFS alternate data stream

```

扫描-v

使用 -v 参数 scan 命令提供详细的日志记录信息、以便在报告错误或警告时进行故障排除或调试。

语法

```
xcp scan -v \\<IP address or hostname of SMB server>\source_share
```

显示示例

```
c:\netapp\xcp>xcp scan -v \\<IP address or hostname of SMB
server>\source_share
xcp scan -v \\<IP address or hostname of SMB server>\source_share
---Truncated output---
source_share\ASUP.pm
source_share\ASUP_REST.pm
source_share\Allflavors_v2.pm
source_share\Armadillo.pm
source_share\AsupExtractor.pm
source_share\BTS_Config.pm
source_share\Backup.pm
source_share\Aggregate.pm
source_share\Burt.pm
source_share\CConfig.pm
source_share\CIFS.pm
source_share\CR.pm
source_share\CRC.pm
source_share\CSHM.pm
source_share\CSM.pm
source_share\agnostic\SFXOD.pm
source_share\agnostic\Snapmirror.pm
source_share\agnostic\VolEfficiency.pm
source_share\agnostic\flatfile.txt
source_share\agnostic
source_share
xcp scan \\<IP address or hostname of SMB server>\source_share
317 scanned, 0 matched, 0 errors
Total Time : 0s
STATUS : PASSED
```

扫描-并行<n>

使用 `-parallel <n>` 参数 `scan` 命令以设置更多或更少的XCP并发进程数。



n的最大值为61。

语法

```
xcp scan -parallel <n> \\<IP address or hostname of SMB  
server>\source_share
```

显示示例

```
c:\netapp\xcp>xcp scan -parallel 8 \\<IP address or hostname of SMB
server>\cifs_share
xcp scan -parallel 8 \\<IP address or hostname of SMB
server>\cifs_share

cifs_share\ASUP.pm
cifs_share\ASUP_REST.pm
cifs_share\Allflavors_v2.pm
cifs_share\Armadillo.pm
cifs_share\AsupExtractor.pm
cifs_share\BTS_Config.pm
cifs_share\Backup.pm
cifs_share\Aggregate.pm
cifs_share\agnostic\CifsAccess.pm
cifs_share\agnostic\DU_Cmode.pm
cifs_share\agnostic\Flexclone.pm
cifs_share\agnostic\HyA_Clone_Utills.pm
cifs_share\agnostic\Fileclone.pm
cifs_share\agnostic\Jobs.pm
cifs_share\agnostic\License.pm
cifs_share\agnostic\Panamax_Clone_Utills.pm
cifs_share\agnostic\LunCmds.pm
cifs_share\agnostic\ProtocolAccess.pm
cifs_share\agnostic\Qtree.pm
cifs_share\agnostic\Quota.pm
cifs_share\agnostic\RbacCmdFetcher.pm
cifs_share\agnostic\RbacCmdFetcher_ReadMe
cifs_share\agnostic\SFXOD.pm
cifs_share\agnostic\Snapmirror.pm
cifs_share\agnostic\VolEfficiency.pm
cifs_share\agnostic\flatfile.txt
cifs_share\agnostic
cifs_share
xcp scan -parallel 8 \\<IP address or hostname of SMB
server>\cifs_share
317 scanned, 0 matched, 0 errors
Total Time : 0s
STATUS : PASSED
```

扫描-匹配<filter>

使用 `-match <filter>` 参数 scan 命令以仅处理与筛选器匹配的文件和目录。

语法

```
xcp scan -match <filter> \\<IP address or hostname of SMB
server>\source_share
```

在以下示例中、`scan -match` 扫描在一个月到一年之间发生更改的所有文件、并在控制台中针对找到的每个文件打印一行。系统将返回每个文件上次修改时间的ISO格式、可供用户读取的文件大小、文件类型及其相对路径。

显示示例

```
c:\netapp\xcp>xcp scan -match "1*month < modified < 1*year" -fmt
"'{:>15} {:>7}{}
{}'.'.format(iso(mtime), humanize_size(size), type, relpath)" \\<IP
address or hostname of SMB server>\source_share
xcp scan -match "1*month < modified < 1*year" -fmt "'{:>15} {:>7} {}
{}'.'.format(iso(mtime), humanize_size(size), type, relpath)" \\<IP
address or hostname of SMB server>\source_share

xcp scan -match 1*month < modified < 1*year -fmt '{:>15} {:>7} {}
{}'.'.format(iso(mtime), humanize_size(size), type, relpath) \\<IP
address or hostname of SMB server>\source_share
317 scanned, 0 matched, 0 errors
Total Time : 0s
STATUS : PASSED
```

在以下示例中、`scan -match` 列出了3个月以上未修改且大小大于4 MB的文件。

显示示例

```
c:\netapp\xcp>xcp scan -match "modified > 3*month and size > 4194304"
-fmt "'{},{},{}',
{}}'.format(iso(mtime), humanize_size(size), relpath)" \\<IP address or
hostname of SMB
server>\source_share
xcp scan -match "modified > 3*month and size > 4194304" -fmt "'{},{},{}',
{}}'.format(iso(mtime), humanize_size(size), relpath)" \\<IP address or
hostname of SMB server>\source_share

xcp scan -match modified > 3*month and size > 4194304 -fmt '{},{},{}',
{}}'.format(iso(mtime), humanize_size(size), relpath) \\<IP address or
hostname of SMB server>\source_share
317 scanned, 0 matched, 0 errors
Total Time : 0s
STATUS : PASSED
```

以下两个示例中的第一个仅与目录匹配、格式设置会在变量"mtime"、"relative path"和"depth"之间添加一个逗号。

第二个示例将同一输出重定向到"name.csv"。

显示示例

```
c:\netapp\xcp>xcp scan -match "type is directory" -fmt
"','.join(map(str, [iso(mtime), relpath, depth]))" \\<IP address or
hostname of SMB server>\source_share
xcp scan -match "type is directory" -fmt "','.join(map(str,
[iso(mtime), relpath, depth]))" \\<IP address or hostname of SMB
server>\source_share

2013-03-07_15:41:40.376072,source_share\agnostic,1
2020-03-05_04:15:07.769268,source_share,0

xcp scan -match type is directory -fmt "','.join(map(str, [iso(mtime),
relpath, depth]))" \\<IP address or hostname of SMB server>\source_share
317 scanned, 2 matched, 0 errors
Total Time : 0s
STATUS : PASSED
```

显示示例

```
c:\netapp\xcp>xcp scan -match "type is directory" -fmt
"','.join(map(str, [iso(mtime), relpath, depth]))" "\\<IP address or
hostname of SMB server>\source_share > name.csv
xcp scan -match "type is directory" -fmt "','.join(map(str,
[iso(mtime), relpath, depth]))" "\\<IP address or hostname of SMB
server>\source_share > name.csv
```

以下示例将打印完整路径和原始路径 `mtime` 非目录的所有文件的值。。 `mtime` 值将填充为70个字符、以便于读取控制台报告。

显示示例

```
c:\netapp\xcp>xcp scan -match "type is not directory" -fmt
"'{}{:>70}'.format(abspath, mtime)" "\\<IP address or hostname of SMB
server>\source_share
xcp scan -match "type is not directory" -fmt "'{}
{:>70}'.format(abspath, mtime)" "\\<IP address or hostname of SMB
server>\source_share

--truncated output--
\\<IP address or hostname of SMB server>\source_share\ASUP.pm
1362688899.238098
\\<IP address or hostname of SMB server>\source_share\ASUP_REST.pm
1362688899.264073
\\<IP address or hostname of SMB server>\source_share\Allflavors_v2.pm
1362688899.394938
\\<IP address or hostname of SMB server>\source_share\Armadillo.pm
1362688899.402936
\\<IP address or hostname of SMB server>\source_share\AsupExtractor.pm
1362688899.410922
\\<IP address or hostname of SMB server>\source_share\BTS_Config.pm
1362688899.443902
\\<IP address or hostname of SMB server>\source_share\Backup.pm
1362688899.444905
\\<IP address or hostname of SMB server>\source_share\Aggregate.pm
1362688899.322019
\\<IP address or hostname of SMB server>\source_share\Burt.pm
1362688899.446889
\\<IP address or hostname of SMB server>\source_share\CConfig.pm
1362688899.4479
\\<IP address or hostname of SMB server>\source_share\CIFS.pm
1362688899.562795
\\<IP address or hostname of SMB
server>\source_share\agnostic\ProtocolAccess.pm
1362688900.358093
\\<IP address or hostname of SMB server>\source_share\agnostic\Qtree.pm
1362688900.359095
\\<IP address or hostname of SMB server>\source_share\agnostic\Quota.pm
1362688900.360094
\\<IP address or hostname of SMB
server>\source_share\agnostic\RbacCmdFetcher.pm
1362688900.3611
\\<IP address or hostname of SMB
server>\source_share\agnostic\RbacCmdFetcher_ReadMe
1362688900.362094
```



```
\\<IP address or hostname of SMB server>\source_share\agnostic\SFXOD.pm
1362688900.363094
\\<IP address or hostname of SMB
server>\source_share\agnostic\Snapmirror.pm
1362688900.364092
\\<IP address or hostname of SMB
server>\source_share\agnostic\VolEfficiency.pm
1362688900.375077
\\<IP address or hostname of SMB
server>\source_share\agnostic\flatfile.txt
1362688900.376076

xcp scan -match type is not directory -fmt '{} {:>70}'.format(abspath,
mtime) \\<IP address or hostname of SMB server>\source_share
317 scanned, 315 matched, 0 errors
Total Time : 0s
STATUS : PASSED
```

扫描-排除<filter>

使用 `-exclude <filter>` 使用 `scan` 用于根据筛选器中的模式排除目录和文件的命令。

语法

```
xcp scan -exclude <filter> \\<IP address or hostname of SMB
server>\source_share
```

在以下示例中、`scan -exclude` 排除在一个月到一年之间更改的任何文件、并为未排除的每个文件在控制台中打印一行。为每个文件打印的详细信息包括其上次修改时间的ISO格式、文件的可读大小、文件类型及其相对路径。

显示示例

```
c:\netapp\xcp>xcp scan -exclude "1*month < modified < 1*year" -fmt
"{'{:>15} {:>7}{}
{'}.format(iso(mtime), humanize_size(size), type, relpath)" \\<IP
address or hostname ofSMB server>\localtest\arch\win32\agnostic
xcp scan -exclude "1*month < modified < 1*year" -fmt "{'{:>15} {:>7}
{'}}'.format(iso(mtime), humanize_size(size), type, relpath)" \\<IP
address or hostname of SMB server>\localtest\arch\win32\agnostic
2013-03-07_15:39:22.852698 46 regular agnostic\P4ENV
2013-03-07_15:40:27.093887 8.40KiB regular agnostic\Client_outage.thpl
2013-03-07_15:40:38.381870 23.0KiB regular
agnostic\IPv6_RA_Configuration_Of_LLA_In_SK_BSD.thpl
2013-03-07_15:40:38.382876 12.0KiB regular
agnostic\IPv6_RA_Default_Route_changes.thpl
2013-03-07_15:40:38.383870 25.8KiB regular
agnostic\IPv6_RA_Port_Role_Change.thpl
2013-03-07_15:40:38.385863 28.6KiB regular
agnostic\IPv6_RA_processing_And_Default_Route_Installation.thpl
2013-03-07_15:40:38.386865 21.8KiB regular
agnostic\IPv6_RA_processing_large_No_Prefix.thpl
2013-03-07_15:40:40.323163          225 regular agnostic\Makefile
2013-03-07_15:40:40.324160          165 regular
agnostic\Makefile.template
----truncated output ----
2013-03-07_15:45:36.668516          0 directory
agnostic\tools\limits_finder\vendor\symfony\src
2013-03-07_15:45:36.668514          0 directory
agnostic\tools\limits_finder\vendor\symfony
2013-03-07_15:45:40.782881          0 directory
agnostic\tools\limits_finder\vendor
2013-03-07_15:45:40.992685          0 directory
agnostic\tools\limits_finder
2013-03-07_15:45:53.242817          0 directory agnostic\tools
2013-03-07_15:46:11.334815          0 directory agnostic

xcp scan -exclude 1*month < modified < 1*year -fmt '{{:>15} {:>7} {}
{'}.format(iso(mtime), humanize_size(size), type, relpath) \\<IP
address or hostname of SMB server>\localtest\arch\win32\agnostic
140,856 scanned, 1 excluded, 0 errors
Total Time : 46s
STATUS : PASSED
```

在以下示例中、 scan -exclude 列出三个月以上未修改且大小大于5.5 KB的未排除文件。为每个文件打印的

详细信息包括其上次修改时间的ISO格式、文件的可读大小、文件类型及其相对路径。

显示示例

```
c:\netapp\xcp>xcp scan -exclude "modified > 3*month and size > 5650"
-fmt "'{ }, { }, {'}.format(iso(mtime), humanize_size(size), relpath)"
\\<IP address or hostname of SMB
server>\localtest\arch\win32\agnostic\snapmirror
xcp scan -exclude "modified > 3*month and size > 5650" -fmt "'{ }, { },
{'}.format(iso(mtime), humanize_size(size) relpath)" \\<IP address or
hostname of SMB server>\localtest\arch\win32\agnostic\snapmirror

2013-03-07_15:44:53.713279, 4.31KiB, snapmirror\rsm_abort.thpl
2013-03-07_15:44:53.714269, 3.80KiB, snapmirror\rsm_break.thpl
2013-03-07_15:44:53.715270, 3.99KiB, snapmirror\rsm_init.thpl
2013-03-07_15:44:53.716268, 2.41KiB, snapmirror\rsm_quiesce.thpl
2013-03-07_15:44:53.717263, 2.70KiB, snapmirror\rsm_release.thpl
2013-03-07_15:44:53.718260, 4.06KiB, snapmirror\rsm_resume.thpl
2013-03-07_15:44:53.720256, 4.77KiB, snapmirror\rsm_resync.thpl
2013-03-07_15:44:53.721258, 3.83KiB, snapmirror\rsm_update.thpl
2013-03-07_15:44:53.724256, 4.74KiB, snapmirror\sm_quiesce.thpl
2013-03-07_15:44:53.725254, 4.03KiB, snapmirror\sm_resync.thpl
2013-03-07_15:44:53.727249, 4.30KiB, snapmirror\sm_store_complete.thpl
2013-03-07_15:44:53.729250, 0, snapmirror

xcp scan -exclude modified > 3*month and size > 5650 -fmt '{ }, { },
{'}.format(iso(mtime), humanize_size(size), relpath) \\<IP address or
hostname of SMB server>\localtest\arch\win32\agnostic\snapmirror
18 scanned, 6 excluded, 0 errors Total Time : 0s
STATUS : PASSED
```

以下示例不包括目录。它列出了未排除的文件、其格式设置会在变量之间添加逗号 mtime, relpath, 和 depth。

显示示例

```
c:\netapp\xcp>xcp scan -exclude "type is directory" -fmt
"','.join(map(str, [iso(mtime), relpath, depth]))" \\<IP address or
hostname of SMB server>\localtest\arch\win32\agnostic\snapmirror
xcp scan -exclude "type is directory" -fmt "','.join(map(str,
[iso(mtime), relpath,depth]))"
\\<IP address or hostname of
SMBserver>\localtest\arch\win32\agnostic\snapmirror
2013-03-07_15:44:53.712271,snapmirror\SMutils.pm,1
2013-03-07_15:44:53.713279,snapmirror\rsm_abort.pm,1
2013-03-07_15:44:53.714269,snapmirror\rsm_break.pm,1
2013-03-07_15:44:53.715270,snapmirror\rsm_init.thpl,1
2013-03-07_15:44:53.716268,snapmirror\rsm_quiesce.thpl,1
2013-03-07_15:44:53.717263,snapmirror\rsm_release.thpl,1
2013-03-07_15:44:53.718260,snapmirror\rsm_resume.thpl,1
2013-03-07_15:44:53.720256,snapmirror\rsm_resync.thpl,1
2013-03-07_15:44:53.721258,snapmirror\rsm_update.thpl,1
2013-03-07_15:44:53.722261,snapmirror\sm_init.thpl,1
2013-03-07_15:44:53.723257,snapmirror\sm_init_complete.thpl,1
2013-03-07_15:44:53.724256,snapmirror\sm_quiesce.thpl,1
2013-03-07_15:44:53.725254,snapmirror\sm_resync.thpl,1
2013-03-07_15:44:53.726250,snapmirror\sm_retrieve_complete.thpl,1
2013-03-07_15:44:53.727249,snapmirror\sm_store_complete.thpl,1
2013-03-07_15:44:53.728256,snapmirror\sm_update.thpl,1
2013-03-07_15:44:53.729260,snapmirror\sm_update_start.thpl,1

xcp scan -exclude type is directory -fmt ','.join(map(str, [iso(mtime),
relpath, depth])) \\<IP address or hostname of SMB
server>\localtest\arch\win32\agnostic\snapmirror
18 scanned, 1 excluded, 0 errors
Total Time : 0s
STATUS : PASSED
```

以下示例将打印完整的文件路径和RAW mtimevalue 所有非目录文件的数量。。 mtimevalue 用70个字符填充、以便于读取控制台报告。

显示示例

```
c:\netapp\xcp>xcp scan -exclude "type is not directory" -fmt "'{}
{:>70}' .format(abspath, mtime)" \\<IP address or hostname of
SMBserver>\source_share

xcp scan -exclude type is not directory -fmt '{}'
{:>70}' .format(abspath, mtime) \\<IP address or hostname of SMB
server>\source_share
18 scanned, 17 excluded, 0errors
Total Time : 0s
STATUS : PASSED
```

扫描-保留-环境

使用 `-preserve-atime` 参数 `scan` 命令以还原源上所有文件的上次访问日期并重置 `atime` 到XCP读取文件之前的原始值。

扫描SMB共享时、如果存储系统配置为修改、则会修改文件的访问时间 (`atime` 读取时)、因为XCP正在逐个读取文件。XCP从不更改 `atime`，它只会读取文件，从而触发更新 `atime`。

语法

```
xcp scan -preserve-atime \\<IP address or hostname of SMB
server>\source_share
```

显示示例

```
c:\netapp\xcp>xcp scan -preserve-atime \\<IP address or hostname of SMB
server>\source_share
xcp scan -preserve-atime \\<IP address or hostname of SMB
server>\source_share

source_share\ASUP.pm
source_share\ASUP_REST.pm
source_share\Allflavors_v2.pm
source_share\Armadillo.pm
source_share\AsupExtractor.pm
source_share\BTS_Config.pm
source_share\Backup.pm
source_share\Aggregate.pm
source_share\Burt.pm
source_share\CConfig.pm
source_share\agnostic\ProtocolAccess.pm
source_share\agnostic\Qtree.pm
source_share\agnostic\Quota.pm
source_share\agnostic\RbacCmdFetcher.pm
source_share\agnostic\RbacCmdFetcher_ReadMe
source_share\agnostic\SFXOD.pm
source_share\agnostic\Snapmirror.pm
source_share\agnostic\VolEfficiency.pm
source_share\agnostic\flatfile.txt
source_share\agnostic
source_share

xcp scan -preserve-atime \\<IP address or hostname of
SMBserver>\source_share
317 scanned, 0 matched, 0 errors
Total Time : 1s
STATUS : PASSED
```

扫描深度<n>

使用 `-depth <n>` 参数 `scan` 命令以限制SMB共享内目录的搜索深度。



- 。 `-depth option`用于指定XCP将文件扫描到子目录的深度。

语法

```
xcp scan -depth <2> \\<IP address or hostname of SMB server>\source_share
```

显示示例

```
c:\netapp\xcp>xcp scan -depth 2 \\<IP address or hostname of SMB
server>\source_share
xcp scan -depth 2 \\<IP address or hostname of SMB server>\source_share

source_share\ASUP.pm
source_share\ASUP_REST.pm
source_share\Allflavors_v2.pm
source_share\Armadillo.pm
source_share\AsupExtractor.pm
source_share\BTS_Config.pm
source_share\Backup.pm
source_share\Aggregate.pm
source_share\Burt.pm
source_share\CConfig.pm
source_share\CIFS.pm
source_share\CR.pm
source_share\CRC.pm
source_share\CSHM.pm
source_share\agnostic\Fileclone.pm
source_share\agnostic\Jobs.pm
source_share\agnostic\License.pm
source_share\agnostic\Panamax_Clone_Utills.pm
source_share\agnostic\LunCmds.pm
source_share\agnostic\ProtocolAccess.pm
source_share\agnostic\Qtree.pm
source_share\agnostic\Quota.pm
source_share\agnostic\RbacCmdFetcher.pm
source_share\agnostic\RbacCmdFetcher_ReadMe
source_share\agnostic\SFXOD.pm
source_share\agnostic\Snapmirror.pm
source_share\agnostic\VolEfficiency.pm
source_share\agnostic\flatfile.txt
source_share\agnostic
source_share

xcp scan -depth 2 \\<IP address or hostname of SMB server>\source_share
317 scanned, 0 matched, 0 errors
Total Time : 0s
STATUS : PASSED
```


扫描-**stats**.

使用 `-stats` 参数 `scan` 命令以树统计信息报告格式列出文件。

语法

```
xcp scan -stats \\<IP address or hostname of SMB server>\source_share
```

显示示例

```

C:\netapp\xcp>xcp scan -stats \\<IP address or hostname of SMB
server>\cifs_share

== Maximum Values ==
      Size      Depth      Namelen      Dirsize
  88.2MiB         3         108         20

== Average Values ==
      Size      Depth      Namelen      Dirsize
   4.74MiB         2         21          9

== Top File Extensions ==
no extension   .PDF      .exe      .html     .whl     .py
other
  22           2         2         2         2         1
9
  20.0KiB      1.54MiB   88.4MiB   124KiB    1.47MiB  1.62KiB
98.3MiB

== Number of files ==
empty   <8KiB   8-64KiB   64KiB-1MiB  1-10MiB   10-100MiB
>100MiB
  2       24         2         7         2         3

== Space used ==
empty   <8KiB   8-64KiB   64KiB-1MiB  1-10MiB   10-100MiB
>100MiB
  0  24.0KiB   124KiB    2.87MiB   2.91MiB   184MiB
0

== Directory entries ==
empty   1-10    10-100    100-1K    1K-10K    >10K
      4         1

== Depth ==
  0-5    6-10    11-15    16-20    21-100    >100
  45

== Modified ==
>1 year  9-12 months  6-9 months  3-6 months  1-3 months  1-31 days  1-
24 hrs  <1
hour    <15 mins    future    <1970    invalid
                                             44
1
                                             190MiB

```

```

== Created ==
>1 year  9-12 months  6-9 months  3-6 months  1-3 months  1-31 days  1-
24 hrs  <1
hour      <15 mins      future      <1970      invalid
                                                45
                                                190MiB

Total count: 45
Directories: 5
Regular files: 40
Symbolic links:
Junctions:
Special files:
Total space for regular files: 190MiB
Total space for directories: 0
Total space used: 190MiB
Dedupe estimate: N/A
Sparse data: N/A
xcp scan -stats \\<IP address or hostname of SMB server>\cifs_share
45 scanned, 0 matched, 0 errors
Total Time : 0s
STATUS : PASSED

```

扫描-html

使用 `-html` 参数 `scan` 用于在HTML统计信息报告中列出文件的命令。



XCP报告(.csv、.html)与XCP二进制文件保存在同一位置。文件名的格式为<xcp_process_id><time_stamp>.html。当XCP无法将安全标识符(SID)映射到所有者名称时、它会使用SID中最后一个“-”后的最后几位数字来表示所有者。例如、当XCP无法将SID S-1-5-21-1896871423-3211229150-3383017265-4854184映射到其所有者时、它使用4854184表示所有者。

语法

```
xcp scan -stats -html -preserve-atime -ownership \\<IP address or hostname
of SMB server>\source_share
```

显示示例

```
Z:\scripts\xcp\windows>xcp scan -stats -html -preserve-atime -ownership
\\<IP address or hostname of SMB server>\source_share
1,972 scanned, 0 matched, 0 errors, 7s
4,768 scanned, 0 matched, 0 errors,12s
7,963 scanned, 0 matched, 0 errors,17s
10,532 scanned, 0 matched, 0 errors,22s
12,866 scanned, 0 matched, 0 errors,27s
15,770 scanned, 0 matched, 0 errors,32s
17,676 scanned, 0 matched, 0 errors,37s

== Maximum Values ==
      Size      Depth      Namelen      Dirsize
535KiB         16         33         45

== Average Values ==
      Size      Depth      Namelen      Dirsize
10.3KiB         7         11         6

== Top File SIDs ==
S-1-5-21-1896871423-3211229150-3383017265-4854184 S-1-5-32-544 S-1-5-
21-1896871423-3211229150-3383017265-3403389
      9318      8470         1

== Top Space SIDs ==
S-1-5-21-1896871423-3211229150-3383017265-4854184 S-1-5-32-544 S-1-5-
21-1896871423-3211229150-3383017265-3403389
76.8MiB      69.8MiB         0

== Top File Extensions ==
      py      .rst      .html      no      extension      .txt
.png      other
      5418      3738      1974      1197      630      336
1344

== Number of files ==
      empty      <8KiB      8-64KiB      64KiB-1MiB      1-10MiB      10-100MiB
>100MiB
      168      11466      2709      294

== Space used ==
      empty      <8KiB      8-64KiB      64KiB-1MiB      1-10MiB      10-100MiB
>100MiB
      0      24.4MiB      55.3MiB      66.9MiB
```

```

== Directory entries ==
  empty      1-10      10-100      100-1K      1K-10K      >10K
    42       2690       420

```

Category	1-10	10-100	100-1K	1K-10K	>10K
empty	42	2690	420		

```

== Depth ==
  0-5      6-10      11-15      16-20      21-100
>100
  3832     12527     1424

```

Depth	0-5	6-10	11-15	16-20	21-100
>100	3832	12527	1424	6	

```

== Modified ==
  >1 year   >1 month   1-31 days   1-24 hrs   <1 hour
<15 mins   future     invalid
  11718     2961

```

Category	>1 year	>1 month	1-31 days	1-24 hrs	<1 hour
<15 mins	11718	2961			3110

```

== Created ==
  >1 year   >1 month   1-31 days   1-24 hrs   <1 hour   <15
mins       future     invalid

```

Category	>1 year	>1 month	1-31 days	1-24 hrs	<1 hour	<15 mins
				1	17788	

```

== Accessed ==
  >1 year   >1 month   1-31 days   1-24 hrs   <1 hour   <15
mins       future     invalid

```

Category	>1 year	>1 month	1-31 days	1-24 hrs	<1 hour	<15 mins
					14624	3165

Total count: 17789
Directories: 3152
Regular files: 14637
Symbolic links:
Junctions:
Special files:
Total space for regular files:147MiB
Total space for directories: 0
Total space used: 147MiB
Dedupe estimate: N/A
Sparse data: N/A
xcp scan -stats -html -preserve-atime -ownership \\<IP address or
hostname ofSMB
server>\source_share
17,789 scanned, 0 matched, 0errors
Total Time : 39s
STATUS : PASSED

扫描.csv

使用 `-csv` 参数 `scan` 用于在CSV树统计信息报告中列出文件的命令。

语法

```
xcp scan -stats -csv -preserve-atime -ownership \\<IP address or hostname  
of SMB server>\source_share
```

显示示例

```
Z:\scripts\xcp\windows>xcp scan -stats -csv -preserve-atime -ownership
\\<IP address or hostname of SMB server>\source_share
```

```
1,761 scanned, 0 matched, 0 errors, 6s
4,949 scanned, 0 matched, 0 errors,11s
7,500 scanned, 0 matched, 0 errors,16s
10,175 scanned, 0 matched, 0 errors,21s
12,371 scanned, 0 matched, 0 errors,26s
15,330 scanned, 0 matched, 0 errors,31s
17,501 scanned, 0 matched, 0 errors,36s
```

== Maximum Values ==

Size	Depth	Namelen	Dirsize
535KiB	16	33	45

== Average Values ==

Size	Depth	Namelen	Dirsize
10.3KiB	7	11	6

== Top File SIDs ==

```
S-1-5-21-1896871423-3211229150-3383017265-4854184 S-1-5-32-544 S-1-5-
21-1896871423-3211229150- 3383017265-3403389
9318 8470 1
```

== Top Space SIDs ==

```
S-1-5-21-1896871423-3211229150-3383017265-4854184 S-1-5-32-544 S-1-5-
21-1896871423-3211229150- 3383017265-3403389
76.8MiB 69.8MiB 0
```

== Top File Extensions ==

.py	.rst	.html	no extension	.txt	.png
5418	3738	1974	1197	630	336
1344					

== Number of files ==

empty	<8KiB	8-64KiB	64KiB-1MiB	1-10MiB	10-100MiB	>100MiB
168	11466	2709	294			

== Space used ==

empty	<8KiB	8-64KiB	64KiB-1MiB	1-10MiB	10-100MiB	>100MiB
0	24.4MiB	55.3MiB	66.9MiB	0	0	

```

0

== Directory entries ==
  empty      1-10    10-100    100-1K    1K-10K    >10K
    42        2690     420
== Depth ==
  0-5        6-10     11-15     16-20     21-100    >100
 3832       12527    1424      6
== Modified ==
 >1 year >1 month 1-31 days 1-24 hrs <1 hour <15 mins
future invalid
 11718      2961      3110
== Created ==
 >1 year >1 month 1-31 days 1-24 hrs <1 hour <15 mins
future invalid
                                17789
== Accessed ==
 >1 year >1 month 1-31 days 1-24 hrs <1 hour <15 mins
future invalid
                                15754      2035

Total count: 17789
Directories: 3152
Regular files: 14637 Symbolic links:
Junctions:
Special files:
Total space for regular files: 147MiB Total space for directories: 0
Total space used: 147MiB
Dedupe estimate: N/A Sparse data: N/A
xcp scan -stats -csv -preserve-ctime -ownership \\<IP address or
hostname of SMB server>\source_share
17,789 scanned, 0 matched, 0 errors Total Time : 40s
STATUS : PASSED

```

扫描-I

使用 `-l` 参数 `scan` 命令以长列表输出格式列出文件。

语法

```
xcp scan -l \\<IP address or hostname of SMB server>\source_share
```


显示示例

```
c:\netapp\xcp>xcp scan -l \\<IP address or hostname of SMB
server>\source_share xcp scan -l \\<IP address or hostname of SMB
server>\source_share

f   195KiB   7y0d source_share\ASUP.pm
f   34.7KiB   7y0d source_share\ASUP_REST.pm
f   4.11KiB   7y0d source_share\Allflavors_v2.pm
f   38.1KiB   7y0d source_share\Armadillo.pm
f   3.83KiB   7y0d source_share\AsupExtractor.pm
f   70.1KiB   7y0d source_share\BTS_Config.pm
f   2.65KiB   7y0d source_share\Backup.pm
f   60.3KiB   7y0d source_share\Aggregate.pm
f   36.9KiB   7y0d source_share\Burt.pm
f   8.98KiB   7y0d source_share\CConfig.pm
f   19.3KiB   7y0d source_share\CIFS.pm
f   20.7KiB   7y0d source_share\CR.pm
f   2.28KiB   7y0d source_share\CRC.pm
f   18.7KiB   7y0d source_share\CSHM.pm
f   43.0KiB   7y0d source_share\CSM.pm
f   19.7KiB   7y0d source_share\ChangeModel.pm
f   33.3KiB   7y0d source_share\Checker.pm
f   3.47KiB   7y0d source_share\Class.pm
f   37.8KiB   7y0d source_share\Client.pm
f   188KiB    7y0d source_share\agnostic\Flexclone.pm
f   15.9KiB   7y0d source_share\agnostic\HyA_Clone_Utils.pm
f   13.4KiB   7y0d source_share\agnostic\Fileclone.pm
f   41.8KiB   7y0d source_share\agnostic\Jobs.pm
f   24.0KiB   7y0d source_share\agnostic\License.pm
f   34.8KiB   7y0d source_share\agnostic\Panamax_Clone_Utils.pm
f   30.2KiB   7y0d source_share\agnostic\LunCmds.pm
f   40.9KiB   7y0d source_share\agnostic\ProtocolAccess.pm
f   15.7KiB   7y0d source_share\agnostic\Qtree.pm
f   29.3KiB   7y0d source_share\agnostic\Quota.pm
f   13.7KiB   7y0d source_share\agnostic\RbacCmdFetcher.pm
f   5.55KiB   7y0d source_share\agnostic\RbacCmdFetcher_ReadMe
f   3.92KiB   7y0d source_share\agnostic\SFXOD.pm
f   35.8KiB   7y0d source_share\agnostic\Snapmirror.pm
f   40.4KiB   7y0d source_share\agnostic\VolEfficiency.pm
f   6.22KiB   7y0d source_share\agnostic\flatfile.txt
d         0   7y0d source_share\agnostic
d         0 19h17m source_share

xcp scan -l \\<IP address or hostname of SMB server>\source_share
317 scanned, 0 matched, 0 errors
```

```
Total Time : 0s  
STATUS : PASSED
```

扫描所有权

使用 `-ownership` 参数 `scan` 命令以检索文件的所有权信息。



您只能使用 `-ownership` 使用 `-l`, `-match`, `-fmt`` 或 ``-stats parameters`

语法

```
xcp scan -l -ownership \\<IP address or hostname of SMB  
server>\source_share
```

显示示例

```
c:\netapp\xcp>xcp scan -l -ownership \\<IP address or hostname of SMB
server>\source_share xcp scan -l -ownership \\<IP address or hostname
of SMB server>\source_share

f   BUILTIN\Administrators  195KiB  7y0d   source_share\ASUP.pm
f   BUILTIN\Administrators  34.7KiB 7y0d   source_share\ASUP_REST.pm
f   BUILTIN\Administrators  4.11KiB 7y0d   source_share\Allflavors_v2.pm
f   BUILTIN\Administrators  38.1KiB 7y0d   source_share\Armadillo.pm
f   BUILTIN\Administrators  3.83KiB 7y0d   source_share\AsupExtractor.pm
f   BUILTIN\Administrators  70.1KiB 7y0d   source_share\BTS_Config.pm
f   BUILTIN\Administrators  2.65KiB 7y0d   source_share\Backup.pm
f   BUILTIN\Administrators  60.3KiB 7y0d   source_share\Aggregate.pm
f   BUILTIN\Administrators  36.9KiB 7y0d   source_share\Burt.pm
f   BUILTIN\Administrators  8.98KiB 7y0d   source_share\CConfig.pm
f   BUILTIN\Administrators  19.3KiB 7y0d   source_share\CIFS.pm
f   BUILTIN\Administrators  20.7KiB 7y0d   source_share\CR.pm
f   BUILTIN\Administrators  2.28KiB 7y0d   source_share\CRC.pm
f   BUILTIN\Administrators  18.7KiB 7y0d   source_share\CSHM.pm
f   BUILTIN\Administrators  43.0KiB 7y0d   source_share\CSM.pm
f   BUILTIN\Administrators  19.7KiB 7y0d   source_share\ChangeModel.pm
f   BUILTIN\Administrators  33.3KiB 7y0d   source_share\Checker.pm
f   BUILTIN\Administrators  3.47KiB 7y0d   source_share\Class.pm
f   BUILTIN\Administrators  37.8KiB 7y0d   source_share\Client.pm
f   BUILTIN\Administrators  2.44KiB 7y0d   source_share\ClientInfo.pm
f   BUILTIN\Administrators  37.2KiB 7y0d   source_share\ClientMgr.pm
f   BUILTIN\Administrators  17.1KiB 7y0d   source_share\ClientRPC.pm
f   BUILTIN\Administrators  9.21KiB 7y0d   source_share\ClusterAgent.pm
f   BUILTIN\Administrators  15.7KiB 7y0d   source_share\agnostic\Qtree.pm
f   BUILTIN\Administrators  29.3KiB 7y0d   source_share\agnostic\Quota.pm
f   BUILTIN\Administrators  13.7KiB 7y0d   source_share\agnostic\RbacCmdFetcher.pm
f   BUILTIN\Administrators  5.55KiB 7y0d   source_share\agnostic\RbacCmdFetcher_ReadMe
f   BUILTIN\Administrators  3.92KiB 7y0d   source_share\agnostic\SFXOD.pm
f   BUILTIN\Administrators  35.8KiB 7y0d   source_share\agnostic\Snapmirror.pm
f   BUILTIN\Administrators  40.4KiB 7y0d   source_share\agnostic\VolEfficiency.pm
f   BUILTIN\Administrators  6.22KiB 7y0d   source_share\agnostic\flatfile.txt
```

```
d BUILTIN\Administrators 7y0d source_share\agnostic
d BUILTIN\Administrators

xcp scan -l -ownership \\<IP address or hostname of SMB
server>\source_share
317 scanned, 0 matched, 0 errors Total Time : 1s
STATUS : PASSED
```

扫描-du

使用 -du 参数 scan 命令总结每个目录(包括子目录)的空间使用量。

语法

```
xcp scan -du \\<IP address or hostname of SMB server>\source_share
```

显示示例

```
c:\netapp\xcp>xcp scan -du \\<IP address or hostname of SMB
server>\source_share xcp scan -du \\<IP address or hostname of SMB
server>\source_share

569KiB source_share\agnostic
19.8MiB source_share

xcp scan -du \\<IP address or hostname of SMB server>\source_share
317 scanned, 0 matched, 0 errors
Total Time : 0s
STATUS : PASSED
```

扫描-f以及<expression>

使用 -fmt <expression> 参数 scan 用于根据定义的表达式设置文件列表格式的命令。

语法

```
xcp scan -fmt "'", '.join(map(str, [relpath, name, size, depth]))'
\\<IPaddress or hostname of SMB server>\source_share
```

显示示例

```
c:\netapp\xcp>xcp scan -fmt "'", '.join(map(str, [relpath, name, size,
depth]))" \\<IP address or hostname of SMB server>\source_share
xcp scan -fmt "'", '.join(map(str, [relpath, name, size, depth]))"
\\<IP address or hostname of SMB server>\source_share

source_share\ASUP.pm, ASUP.pm, 199239, 1
source_share\ASUP_REST.pm, ASUP_REST.pm, 35506, 1
source_share\Allflavors_v2.pm, Allflavors_v2.pm, 4204, 1
source_share\Armadillo.pm, Armadillo.pm, 39024, 1
source_share\AsupExtractor.pm, AsupExtractor.pm, 3924, 1
source_share\BTS_Config.pm, BTS_Config.pm, 71777, 1
source_share\Backup.pm, Backup.pm, 2714, 1
source_share\Aggregate.pm, Aggregate.pm, 61699, 1
source_share\Burt.pm, Burt.pm, 37780, 1
source_share\CConfig.pm, CConfig.pm, 9195, 1
source_share\CIFS.pm, CIFS.pm, 19779, 1
source_share\CR.pm, CR.pm, 21215, 1
source_share\CRC.pm, CRC.pm, 2337, 1
source_share\agnostic\LunCmds.pm, LunCmds.pm, 30962, 2
source_share\agnostic\ProtocolAccess.pm, ProtocolAccess.pm, 41868, 2
source_share\agnostic\Qtree.pm, Qtree.pm, 16057,2
source_share\agnostic\Quota.pm, Quota.pm, 30018,2
source_share\agnostic\RbacCmdFetcher.pm, RbacCmdFetcher.pm, 14067, 2
source_share\agnostic\RbacCmdFetcher_ReadMe, RbacCmdFetcher_ReadMe,
5685, 2
source_share\agnostic\SFXOD.pm, SFXOD.pm, 4019, 2
source_share\agnostic\Snapmirror.pm, Snapmirror.pm, 36624, 2
source_share\agnostic\VolEfficiency.pm, VolEfficiency.pm, 41344, 2
source_share\agnostic\flatfile.txt, flatfile.txt, 6366, 2
source_share\agnostic, agnostic, 0, 1
source_share, , 0, 0
xcp scan -fmt "'", '.join(map(str, [relpath, name, size, depth])) \\<IP
address or hostname of SMB server>\source_share
317 scanned, 0 matched, 0 errors
Total Time : 0s
STATUS : PASSED
```

扫描-ADS

使用 `-ads` 带有的标志参数 `scan` 使用命令以递归方式扫描整个SMB共享、并列出所有文件和任何关联的备用数据流。

语法

```
xcp scan -ads \\<source_ip_address>\source_share\src
```

显示示例

```
C:\netapp\xcp>xcp scan -ads \\<source_ip_address>\source_share\src

src\file1.txt:ads1
src\file1.txt:ads_file1.txt_1697037934.4154522.txt
src\file1.txt
src\file2.txt:ads1
src\file2.txt:ads_file2.txt_1697037934.5873265.txt
src\file2.txt
src\test1.txt:ads_test1.txt_1697037934.7435765.txt
src\test1.txt
src\dir1\dfile1.txt:ads1
src\dir1\dfile1.txt:ads_dfile1.txt_1697037934.1185782.txt
src\dir1\dfile1.txt:ads_xcp.exe
src\dir1\dfile1.txt:ads_tar
src\dir1\dfile1.txt:java_exe
src\dir1\dfile1.txt:cmdzip
src\dir1\dfile1.txt:ads1_2GB
src\dir1\dfile1.txt
src\dir1:ads1
src\dir1:ads_dir1_1697038504.087317.txt
src\dir1
src:ads_src_1697038504.7123322.txt
src

xcp scan -ads \\<source_ip_address>\source_share\src
6 scanned, 0 matched, 0 errors, 15 ads scanned
Total Time : 2s
STATUS : PASSED
```

复制

。 copy 命令会扫描整个源目录结构并将其复制到目标SMB共享。。 copy 命令需要源路径和目标路径作为变量。扫描和复制的文件，吞吐量 / 速度和已用时间详细信息每五秒打印一次到控制台。



- 运行时日志文件存储在C:\NetApp\XCP下。
- 这 copy 命令复制数据而不使用访问控制列表(ACL)。

语法

```
xcp copy \\<IP address or hostname of SMB server>\source_share \\<IP address of SMB destination server>\dest_share
```

显示示例

```
c:\netapp\xcp>xcp copy \\<IP address or hostname of SMB server>\source_share \\<IP address of SMB destination server>\dest_share

xcp copy \\<IP address or hostname of SMB server>\source_share \\<IP address of SMB destination server>\dest_share
317 scanned, 0 matched, 316 copied, 0 errors
Total Time : 2s
STATUS : PASSED
```

下表列出了 `copy` 参数及其问题描述。

参数	Description
<code>copy -h</code> 、 <code>--help</code>	显示有关的详细信息 <code>copy</code> 命令：
<code>copy -v</code>	增加调试详细信息。
<code><<smb_copy_parallel,复制-并行(); n</code>	指定并发进程的数量(默认值： <code><cpu-count></code>)。
<code><<smb_copy_match,复制-匹配(); 过滤器();</code>	仅处理与筛选器匹配的文件和目录(请参见 <code>xcp help - match</code> 有关详细信息、请参见)。
<code><<smb_copy_exclude,复制-排除(); 过滤器();</code>	仅在筛选器中排除文件和目录
<code>copy -t 日期-地</code>	还原源上上次访问的日期。
<code>copy -acl</code>	复制安全信息。
<code><<smb_copy_acl,copy -fallback-user</code>	指定目标计算机上接收本地(非域)源计算机用户权限的Active Directory用户或本地(非域)用户。例如、 <code>domain\administrator</code> 。
<code><<smb_copy_acl,copy -fallback-group</code>	指定目标计算机上接收本地(非域)源计算机组权限的Active Directory组或本地(非域)组。例如、 <code>domain\administrators</code> 。
<code>copy -root</code>	复制根目录的ACL。
<code>copy -aclverify{yes, no}</code>	提供了一个选项、用于在复制-acl操作期间跳过或包括ACL验证。
<code>copy -no所有权</code>	不复制所有权。
<code><<smb_copy_bs,copy -BS (); n</code>	读/写块大小(默认值： 1M)

参数	Description
copy -ADS	将源SMB共享中的NTFS备用数据流复制到目标SMB共享。

copy -h、--help

使用 `-h` 和 `--help` 参数 `copy` 命令以显示有关的详细信息 `copy` 命令

语法

```
xcp copy -help
```



```

C:\netapp\xcp>xcp copy -help

usage: xcp copy [-h] [-v] [-parallel <n>] [-match <filter>] [-exclude
<filter>] [-preserve- atime] [-acl] [-fallback-user FALLBACK_USER]
[-fallback-group FALLBACK_GROUP] [-loglevel <name>] [-root] [-
noownership] [- aclverify {yes,no}] [-bs <n>] [-ads]
        source target

positional arguments:
  source
  target

optional arguments:
-h, --help            show this help message and exit
-v                    increase debug verbosity
-parallel <n>        number of concurrent processes (default: <cpu-
count>)
-match <filter>      only process files and directories that match the
filter (see `xcp help -match` for details)
-exclude <filter>    Exclude files and directories that match the
filter (see `xcp help - exclude` for details)
-preserve-atime      restore last accessed date on source
-acl                  copy security information
-fallback-user FALLBACK_USER
                    the name of the user on the target machine to
receive the permissions of local (non-domain) source machine users (eg.
domain\administrator)
-fallback-group FALLBACK_GROUP
                    the name of the group on the target machine to
receive the permissions of local (non-domain) source machine groups
(eg. domain\administrators)
-loglevel <name>    option to set log level filter (default:INFO)
-root                copy acl for root directory
-noownership         do not copy ownership
-aclverify {yes,no} choose whether you need to skip acl verification
-bs <n>              read/write block size for copy (default: 1M)
-ads                 copy NTFS alternate data streams.

```

copy -v

使用 `-v` 参数 `copy` 命令以提供详细的调试信息。

语法

```
xcp copy -v \\<IP address or hostname of SMB server>\source_share \\<IP address of SMB destination server>\dest_share
```

显示示例

```
c:\netapp\xcp>xcp copy -v \\<IP address of SMB destination server>\src
\\<IP address of SMB destination server>\dest\d1

failed to set attributes for "d1": (5, 'CreateDirectory', 'Access is
denied.')
```

```
failed to copy "f1.txt": (5, 'CreateFile', 'Access is denied.')
```

```
failed to set attributes for "": (5, 'SetFileAttributesW', 'Access is
denied.')
```

```
error setting timestamps on "": errno (code: 5) Access is
denied.
```

```
H:\p 4\xcp_latest\xcp_cifs\xcp\ main .py copy -v \\<IP address of SMB
destination server>\src \\<IP address of SMB destination
server>\dest\d1
3 scanned, 0 matched, 0 skipped, 1 copied, 0 (0/s), 3 errors
Total Time : 3s
STATUS : FAILED
```

copy -par行并行<n>

使用 `-parallel <n>` 参数 `copy` 命令以设置更多或更少的XCP并发进程数。的默认值 `-parallel` 等于CPU计数。



n的最大值为61。

语法

```
xcp copy -parallel <n> \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination server>\dest_share
```

显示示例

```
c:\netapp\xcp>xcp copy -parallel 7 \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination
server>\dest_share

xcp copy -parallel 7 \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination
server>\dest_share
317 scanned, 0 matched, 316 copied, 0 errors
Total Time : 2s
STATUS : PASSED
```

copy -match <filter>

使用 `-match <filter>` 参数 `copy` 命令以仅复制与传递的参数匹配的数据。

语法

```
xcp copy -match <filter> \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination server>\dest_share
```

显示示例

```
c:\netapp\xcp>xcp copy -match "'gx' in name" \\<IP address or hostname
of SMB server>\source_share \\<IP address of SMB destination
server>\dest_share

xcp copy -match 'gx' in name \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination
server>\dest_share
317 scanned, 5 matched, 4 copied, 0 errors
Total Time : 1s
STATUS : PASSED
```

copy -排除<filter>

使用 `-exclude <filter>` 参数 `copy` 命令以仅复制排除的数据。

语法

```
xcp copy -exclude <filter> \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination server>\dest_share
```

在以下示例中、已排除名称中包含字符串"resync"的文件和目录的副本。

显示示例

```
c:\netapp\xcp>xcp copy -exclude "'resync' in name" \\<IP address or
hostname of SMB server>\source_share \\<IP address or hostname of SMB
server>\dest_share
```

```
xcp copy -exclude 'resync' in name \\<IP address or hostname of SMB
server>\source_share \\<IP address or hostname of SMB
server>\dest_share
18 scanned, 2 excluded, 0 skipped, 15 copied, 122KiB (50.5KiB/s), 0
errors
Total Time : 2s
STATUS : PASSED
```

copy -保持-地

使用 -preserve-atime 参数 copy 命令将"adi"重置为原始值、然后XCP读取文件。

语法

```
xcp copy -preserve-atime \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination server>\dest_share
```

显示示例

```
c:\netapp\xcp>xcp copy -preserve-atime \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination
server>\dest_share

xcp copy -preserve-atime \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination
server>\dest_share
317 scanned, 0 matched, 316 copied, 0 errors
Total Time : 2s
STATUS : PASSED
```

copy -acl -reallback-user <fallback_user>-reallback-group <fallback_group>

使用 `-acl` 参数 `copy` 命令以激活安全描述符(ACL)的传输。

使用 `-acl` 参数 `-fallback-user` 和 `-fallback-group` 用于在目标计算机上或从Active Directory指定用户和组以接收本地(非域)源计算机用户或组的权限的选项。这并不是指Active Directory中不匹配的用户。

语法

```
xcp copy -acl -fallback-user <fallback_user> -fallback-group
<fallback_group> \\<IP address or hostname of SMB server>\source_share
\\<IP address of SMB destination server>\dest_share
```

copy -aclverify{yes, no}

使用 `-aclverify {yes,no}` 参数 `copy` 命令、用于在ACL复制操作期间跳过或包含ACL验证。

您必须使用 `-aclverify {yes,no}` 参数 `copy -acl` 命令：默认情况下、ACL复制操作会验证ACL。如果您设置了 `-aclverify` 选项 `no`，则可以跳过ACL验证和 `fallback-user` 和 `fallback-group` 不需要选项。如果您设置了 `-aclverify to yes`，则需要 `fallback-user` 和 `fallback-group` 选项、如以下示例所示。

语法

```
xcp copy -acl -aclverify yes -fallback-user <fallback_user> -fallback
-group <fallback_group> \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination server>\dest_share
```

显示示例

```
C:\NetApp\xcp>xcp copy -acl -aclverify yes -fallback-user "DOMAIN\User"
-fallback-group "DOMAIN\Group"
\\<source_IP_address>\source_share
\\<destination_IP_address>\dest_share

12 scanned, 0 matched, 0 skipped, 0 copied, 0 (0/s), 0 errors, 5s, 0
acls copied
12 scanned, 0 matched, 0 skipped, 0 copied, 0 (0/s), 0 errors, 10s, 0
acls copied
12 scanned, 0 matched, 0 skipped, 0 copied, 0 (0/s), 0 errors, 15s, 0
acls copied xcp copy -acl -aclverify yes -fallback-user "DOMAIN\User"
-fallback-group "DOMAIN\Group" \\<source_IP_address>\source_share
\\<destination_IP_address>\dest_share
12 scanned, 0 matched, 0 skipped, 11 copied, 10KiB (634/s), 0 errors,
11 acls copied
Total Time : 16s
STATUS : PASSED

C:\NetApp\xcp>xcp copy -acl -aclverify no
\\<source_IP_address>\source_share
\\<destination_IP_address>\dest_share

xcp copy -acl -aclverify no \\<source_IP_address>\source_share
\\<destination_IP_address>\dest_share
12 scanned, 0 matched, 0 skipped, 11 copied, 10KiB (5.61KiB/s), 0
errors, 11 acls copied
Total Time : 1s
STATUS : PASSED
```

copy -root

使用 `-root` 参数 `copy` 命令以复制根目录的ACL。

语法

```
xcp copy -acl -root -fallback-user "DOMAIN\User" -fallback-group
"DOMAIN\Group" \\<IP address or hostname of SMB server>\source_share \\<IP
address of SMB destination server>\dest_share
```

显示示例

```
C:\NetApp\XCP>xcp copy -acl -root -fallback-user "DOMAIN\User"
-fallback-group "DOMAIN\Group" \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination
server>\dest_share

xcp copy -acl -root -fallback-user "DOMAIN\User" -fallback-group
"DOMAIN\Group" \\<IP address or hostname of SMB server>\source_share
\\<IP address of SMB destination server>\dest_share
6 scanned, 0 matched, 0 skipped, 5 copied, 200 (108/s), 0 errors, 6
acls copied
Total Time : 1s
STATUS : PASSED
```

copy -no所有权

使用 `-noownership` 参数 `copy` 用于指定不将所有权从源复制到目标的命令。您必须使用 `-noownership` 使用 `-acl` 选项 `fallback-user` 和 `fallback-group` 作为必需参数。

语法

```
xcp.exe copy -acl -noownership -fallback-user <fallback_user> -fallback
-group <fallback_group> \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination server>\dest_share
```

显示示例

```
C:\Netapp\xcp>xcp.exe copy -acl -noownership -fallback-user
"DOMAIN\User" -fallback-group "DOMAIN\Group"
\\<source_IP_address>\source_share
\\<destination_IP_address>\dest_share

568 scanned, 0 matched, 0 skipped, 0 copied, 0 (0/s), 0 errors, 5s, 0
acls copied
568 scanned, 0 matched, 0 skipped, 0 copied, 0 (0/s), 0 errors, 10s, 0
acls copied
568 scanned, 0 matched, 0 skipped, 135 copied, 4.26MiB (872KiB/s), 0
errors, 15s, 137 acls copied xcp.exe copy -acl -noownership -fallback
-user "DOMAIN\User" -fallback-group "DOMAIN\Group"
\\<source_IP_address>\source_share
\\<destination_IP_address>\dest_share
568 scanned, 0 matched, 0 skipped, 567 copied, 17.7MiB (1.01MiB/s), 0
errors, 567 acls copied
Total Time : 17s
STATUS : PASSED
```

copy -BS <n>

使用 `-bs <n>` 参数 `copy` 命令以提供读/写块大小。默认值为1M。

语法

```
xcp.exe copy -bs <n> \\<IP address or hostname of SMB server>\source_share
\\<IP address of SMB destination server>\dest_share
```

显示示例

```
c:\Netapp\xcp>xcp.exe copy -bs 32k \\<source_IP_address>\source_share
\\<destination_IP_address>\dest_share

xcp.exe copy -bs 32k \\<source_IP_address>\source_share
\\<destination_IP_address>\dest_share
568 scanned, 0 matched, 0 skipped, 567 copied, 17.7MiB (6.75MiB/s), 0
errors
Total Time : 2s
STATUS : PASSED
```


copy -ADS

使用 `-ads` 参数 `copy` 用于将NTFS备用数据流从源SMB共享复制到目标SMB共享的命令。

语法

```
xcp copy -ads \\<IP address or hostname of SMB server>\source_share \\<IP address of SMB destination server>\dest_share
```

显示示例

```
c:\netapp\xcp>xcp copy -ads \\<source_IP_address>\source_share\src
\\<dest_IP_address>\dest_share

6 scanned, 0 matched, 0 skipped, 3 copied, 13 (2.41/s), 0 errors, 5s,
10 ads copied
6 scanned, 0 matched, 0 skipped, 3 copied, 13 (0/s),
0 errors, 10s, 11 ads copied
6 scanned, 0 matched, 0 skipped, 3 copied, 13 (0/s),
0 errors, 15s, 12 ads copied
6 scanned, 0 matched, 0 skipped, 3 copied, 13 (0/s),
0 errors, 20s, 13 ads copied
6 scanned, 0 matched, 0 skipped, 3 copied, 13 (0/s),
0 errors, 25s, 13 ads copied
6 scanned, 0 matched, 0 skipped, 3 copied, 13 (0/s),
0 errors, 30s, 13 ads copied
6 scanned, 0 matched, 0 skipped, 3 copied, 13 (0/s),
0 errors, 35s, 13 ads copied
6 scanned, 0 matched, 0 skipped, 3 copied, 13 (0/s),
0 errors, 40s, 13 ads copied
6 scanned, 0 matched, 0 skipped, 3 copied, 13 (0/s),
0 errors, 45s, 13 ads copied
6 scanned, 0 matched, 0 skipped, 3 copied, 13 (0/s),
0 errors, 2m15s, 13 ads copied
6 scanned, 0 matched, 0 skipped, 3 copied, 13 (0/s),
0 errors, 3m5s, 13 ads copied
xcp copy -ads \\<source_IP_address>\source_share\src
\\<desination_IP_address>\dest_share
6 scanned, 0 matched, 0 skipped, 5 copied, 26 (0.137/s), 0 errors, 14
ads copied
Total Time : 3m9s
STATUS : PASSED
```

同步

。 sync 命令可并行扫描源共享和目标共享中的更改和修改、并对目标应用相应的操作、以确保目标与源共享完全相同。 。 sync 命令用于比较数据内容、时间戳、文件属性、所有权和安全信息。

语法

```
xcp sync \\<source SMB share> \\<IP address of SMB destination server>
```

显示示例

```
c:\netapp\xcp>xcp sync \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination
server>\dest_share
xcp sync \\<IP address or hostname of SMB server>\source_share \\<IP
address of SMB destination server>\dest_share
xcp sync \\<IP address or hostname of SMB server>\source_share \\<IP
address of SMB destination server>\dest_share
634 scanned, 0 copied, 634 compared, 0 removed, 0 errors
Total Time : 3s
STATUS : PASSED
```

下表列出了 sync 参数及其问题描述。

参数	Description
sync -h、--help	显示此帮助消息并退出。
sync -v	增加调试详细信息。
<<smb_sync_parallel,sync -并行(); n	并发进程数(默认值: <cpu-count>)。
<<smb_sync_match,同步-匹配过滤器	仅处理与筛选器匹配的文件和目录(请参见 xcp help - match 有关详细信息、请参见)。
<<smb_sync_exclude,同步-排除(); 过滤器();	仅在筛选器中排除文件和目录。
sync -保留-环境	还原源上上次访问的日期。
sync -no地me	请勿检查文件访问时间。
sync -noctime	请勿检查文件创建时间。
sync -nomtime	请勿检查文件修改时间。(此选项已弃用。如果没有此选项、Sync将继续运行。)
sync -noattrs	不检查属性。
sync -no所有权	请勿检查所有权。
<<sync_smb_atime,sync -atiewindow (); 浮点型();	可接受的访问时间差(以秒为单位)。

参数	Description
<<sync_smb_ctime, sync -cdewindow (); 浮点型();	可接受的创建时间差(以秒为单位)。
<<sync_smb_mtime, sync -mtiewindow (); 浮点型();	可接受的修改时间差(以秒为单位)。
<code>sync -acl</code>	复制安全信息。
<<sync_smb_acl, sync -fallback-user	目标计算机上用于接收本地(非域)源计算机用户权限的Active Directory用户或本地(非域)用户(例如: domain\administrator)。
<<sync_smb_acl, sync -reallback-group	目标计算机上用于接收本地(非域)源计算机组(例如: domain\administrators)权限的Active Directory组或本地(非域)组。
<code>sync -l</code>	增加输出详细信息。
<code>sync -root</code>	同步根目录的ACL。
<code>sync -onlyacl</code>	仅复制安全信息。
<code>sync -aclverify{yes, no}</code>	在ACL同步操作期间提供一个选项来包括或跳过ACL验证。
<<smb_sync_bs, 同步-BS	Read/Write blocksize (读/写块大小)(默认值: 1M)。
<code>sync -ADS</code>	使用 <code>sync</code> 命令 <code>-ads</code> 此标志用于扫描源SMB共享和目标SMB共享中备用数据流的更改和修改。如果存在更改、则会将更改应用于的目标 确保目标与源完全相同。

sync -h、--help

使用 `-h` 和 `--help` 参数 `sync` 命令以显示有关的详细信息 `sync` 命令

语法

```
xcp sync --help
```

显示示例

```
C:\Netapp\xcp>xcp sync --help
usage: xcp sync [-h] [-v] [-parallel <n>] [-match <filter>] [-exclude
<filter>] [-preserve-atime] [-noatime] [-noctime] [-nomtime] [-noattrs]
[-atimewindow <float>]
[-ctimewindow <float>] [-mtimewindow <float>] [-acl] [-fallback-user
FALLBACK_USER] [-fallback-group FALLBACK_GROUP] [-loglevel <name>] [-l]
[-root]
[-noownership] [-onlyacl] [-aclverify {yes,no}] [-bs <n>] [-ads] source
target
```

Note: ONTAP does not let a SMB client modify COMPRESSED or ENCRYPTED attributes. XCP sync will ignore these file attributes.

positional arguments:

- source
- target

optional arguments:

- h, --help show this help message and exit
- v increase debug verbosity
- parallel <n> number of concurrent processes (default: <cpu-count>)
- match <filter> only process files and directories that match the filter (see `xcp help -match` for details)
- exclude <filter> Exclude files and directories that match the filter (see `xcp help -exclude` for details)
- preserve-atime restore last accessed date on source
- noatime do not check file access time
- noctime do not check file creation time
- nomtime do not check file modification time
- noattrs do not check attributes
- atimewindow <float> acceptable access time difference in seconds
- ctimewindow <float> acceptable creation time difference in seconds
- mtimewindow <float> acceptable modification time difference in seconds
- acl copy security information
- fallback-user FALLBACK_USER the name of the user on the target machine to receive the permissions of local (non-domain) source machine users (eg. domain\administrator)
- fallback-group FALLBACK_GROUP the name of the group on the target machine to receive the permissions of local (non-domain) source machine groups

(eg. domain\administrators)

```
-loglevel <name>      option to set log levelfilter
-l                    increase output detail
-root                sync acl for root directory
-noownership          do not sync ownership
-onlyacl              sync only acls
-aclverify {yes,no}  choose whether you need to skip acl
verification
-bs <n>               read/write block size for sync (default: 1M)
-ads                  sync ntfs alternate data stream
```

sync -v

使用 `-v` 参数 `sync` 命令以提供详细的调试信息。

语法

```
xcp sync -v \\<IP address or hostname of SMB
server>\vol_SMB_source_XXXXXX\warning \\<IP address of SMB destination
server>\vol_SMB_target_XXXXXX
```

显示示例

```
C:\XCP>xcp sync -v \\<IP address or hostname of SMB
server>\vol_SMB_source_XXXXXX\warning \\<IP address of SMB destination
server>\vol_SMB_target_XXXXXX
ERROR failed to remove from target
"assembly\GAC_32\Microsoft.CertificateServices.PKIClient.Cmdlets\v4.0_6
.3.0.0 31bf3856ad364e35\pki.psd1": [Errno 13] Access is denied:
'\\?\UNC\\<IP address of SMB destination server>\vol_SMB_tar
shil\assembly\GAC_32\Microsoft.CertificateServices.PKIClient.Cmdlets
\v4.0_6.3.0.0 31bf3856ad364e35\pki.psd1'
ERROR failed to remove from target
"assembly\GAC_64\Microsoft.GroupPolicy.AdmTmplEditor\v4.0_6.3.0.0
31bf3856ad364e35\Microsoft.GroupPolicy.AdmTmplEditor.dll": [Errno 13]
Access is denied: '\\?\UNC\10.61.
\vol_SMB_target_XXXXXX\assembly\GAC_64\Microsoft.GroupPolicy.AdmTmpl
Editor\v4.0_6.3.0.0 31bf
3856ad364e35\Microsoft.GroupPolicy.AdmTmplEditor.dll'
1,933 scanned, 1,361 compared, 2 errors, 0 skipped, 0 copied, 1,120
removed, 5s ERROR failed to remove from target
"assembly\GAC_64\System.Printing\v4.0_4.0.0.0
31bf3856ad364e35\System.Printing.dll": [Errno 13] Access is denied:
'\\?\UNC\\<IP address of SMB destination
server>\vol_SMB_target_XXXXXX\assembly\
4\System.Printing\v4.0_4.0.0.0 31bf3856ad364e35\System.Printing.dll'
ERROR failed to remove from target
"assembly\GAC_MSIL\Microsoft.PowerShell.Workflow.ServiceCore\v4.0_3.0.0
.0 31bf3856ad364e35\Microsoft.PowerShell.Workflow.ServiceCore.dll":
[Errno 13] Access is denied: '\\\
\\<IP address of SMB destination
server>\vol_SMB_target_XXXXXX\assembly\GAC_MSIL\Microsoft.PowerShel
l.Workflow.ServiceCore\v4
.0_3.0.0.0
31bf3856ad364e35\Microsoft.PowerShell.Workflow.ServiceCore.dll' ERROR
failed to remove from target
"assembly\GAC_MSIL\Microsoft.RightsManagementServices.ServerManager.Dep
loymentPlugin\v4.0_6.3.0.0
31bf3856ad364e35\Microsoft.RightsManagementServices.ServerManager.Deplo
ymen n.dll": [Errno 13] Access is denied: '\\?\UNC\\<IP address of
SMB destination
server>\vol_SMB_target_XXXXXX\assembly\GAC_MSIL\Microsoft.RightsMan
agementServices.ServerMana ger.DeploymentPlugin\v4.0_6.3.0.0
31bf3856ad364e35\Mic
.RightsManagementServices.ServerManager.DeploymentPlugin.dll'
ERROR failed to remove from target
```

```

"assembly\GAC_MSIL\Microsoft.WSMan.Management\v4.0_3.0.0.0
31bf3856ad364e35\Microsoft.WSMan.Management.dll": [Errno 13] Access is
denied: '\\\?\\UNC\<IP address of SMB destination server>\\vol_SMB_
_xxxxxx\\assembly\GAC_MSIL\Microsoft.WSMan.Management\v4.0_3.0.0.0
31bf3856ad364e35\Microsoft.WSMan.Management.dll'
ERROR failed to remove from target
"assembly\GAC_MSIL\PresentationUI\v4.0_4.0.0.0
31bf3856ad364e35\PresentationUI.dll": [Errno 13] Access is denied:
 '\\\?\\UNC\<IP address of SMB destination
server>\\vol_SMB_target_xxxxxx\\assembly\
SIL\PresentationUI\v4.0_4.0.0.0 31bf3856ad364e35\PresentationUI.dll'
ERROR failed to remove from target
"assembly\GAC_MSIL\System.IO.Compression.FileSystem\v4.0_4.0.0.0
b77a5c561934e089\System.IO.Compression.FileSystem.dll": [Errno 13]
Access is denied: '\\\?\\UNC\10.61.71.5
_SMB_target_xxxxxx\\assembly\GAC_MSIL\System.IO.Compression.FileSyste
m\v4.0_4.0.0.0 b77a5c561
934e089\System.IO.Compression.FileSystem.dll'
ERROR failed to remove from target
"assembly\GAC_MSIL\System.IdentityModel.Selectors\v4.0_4.0.0.0
b77a5c561934e089\System.IdentityModel.Selectors.dll": [Errno 13]
Access is denied: '\\\?\\UNC\<IP address of SMB destination
server>\\v
s_target_xxxxxx\\assembly\GAC_MSIL\System.IdentityModel.Selectors\v4
.0_4.0.0.0 b77a5c561934e089\System.IdentityModel.Selectors.dll'
2,747 scanned, 2,675 compared, 9 errors, 0 skipped, 0 copied, 2,624
removed, 10s ERROR failed to remove from target
"assembly\GAC_MSIL\System.Web.DataVisualization\v4.0_4.0.0.0
31bf3856ad364e35\System.Web.DataVisualization.dll": [Errno 13] Access
is denied: '\\\?\\UNC\<IP address of SMB destination server>\\vol_c
rget_xxxxxx\\assembly\GAC_MSIL\System.Web.DataVisualization\v4.0_4.0
.0 31bf3856ad364e35\System.Web.DataVisualization.dll'
cp sync -v \<IP address or hostname of SMB
server>\\vol_SMB_source_xxxxxx\warning \<IP address of SMB destination
server>\\vol_SMB_target_xxxxxx
2,831 scanned, 0 copied, 2,831 compared, 0 removed, 10 errors Total
Time : 10s
STATUS : PASSED

```

sync -par行并行<n>

使用 `-parallel <n>` 参数 `sync` 命令以设置更多或更少的XCP并发进程数。 `sync -parallel <n>` 命令会与并发进程数同步(默认值: `<cpu-count>`)。



n的最大值为61。

语法

```
xcp sync -parallel <n>> \\<IP address or hostname of SMB
server>\volxcp\\<IP address of SMB destination server>\xcp1_test1
```

显示示例

```
C:\xcp>xcp sync -parallel 5 \\<IP address or hostname of SMB
server>\volxcp\\<IP address of SMB destination server>\xcp1_test1
658 scanned, 244 compared, 0 errors, 0 skipped, 0 copied, 0 removed, 5s
658 scanned, 606 compared, 0 errors, 0 skipped, 0 copied, 0 removed,
10s
658 scanned, 658 compared, 0 errors, 0 skipped, 0 copied, 0 removed,
10s
Sending statistics...
```

Sync -match <filter>

使用 `-match <filter>` 参数 `sync` 命令以扫描源树和目标树、并仅比较与筛选器参数匹配的文件或目录。如果存在任何差异、该命令会对目标应用所需的操作、以使其保持同步。

语法

```
xcp sync -match <filter> \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination server>\dest_share
```

显示示例

```
c:\netapp\xcp>xcp sync -match "'gx' in name" \\<IP address or hostname
of SMB server>\source_share \\<IP address of SMB destination
server>\dest_share
xcp sync -match "'gx' in name" \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination
server>\dest_share

xcp sync -match 'gx' in name \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination
server>\dest_share
634 scanned, 0 copied, 10 compared, 0 removed, 0 errors
Total Time : 2s
STATUS : PASSED
```


Sync -排除<filter>

使用 `-exclude <filter>` 参数 `sync` 命令以仅排除筛选器中的文件和目录。

语法

```
xcp sync -exclude <filter> \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination server>\dest_share
```

显示示例

```
C:\netapp\xcp>xcp sync -exclude "path('*Exceptions*')" \\<IP address or
hostname of SMB server>\source_share \\<IP address of SMB destination
server>\dest_share

xcp sync -exclude path('*Exceptions*') \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination
server>\dest_share
451 scanned, 427 excluded, 0 copied, 24 compared, 0 skipped, 0 removed,
0 errors
Total Time : 2s
STATUS : PASSED
```

sync -保留-环境

使用 `-preserve-ctime` 参数 `sync` 命令、用于在XCP读取文件之前将"adi"重置为原始值。

语法

```
xcp sync -preserve-ctime \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination server>\dest_share
```

显示示例

```
c:\netapp\xcp>xcp sync -preserve-atime \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination
server>\dest_share
xcp sync -preserve-atime \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination
server>\dest_share

xcp sync -preserve-atime \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination
server>\dest_share
634 scanned, 0 copied, 634 compared, 0 removed, 0 errors
Total Time : 4s
STATUS : PASSED
```

sync -noatime

使用 `-noatime` 参数 `sync` 命令将源中的所有差异同步到目标、但不包括访问时间有差异的文件。

语法

```
xcp sync -noatime \\<IP address or hostname of SMB server>\source_share
\\<IP address of SMB destination server>\dest_share
```

显示示例

```
c:\netapp\xcp>xcp sync -noatime \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination
server>\dest_share
xcp sync -noatime \\<IP address or hostname of SMB server>\source_share
\\<IP address of SMB destination server>\dest_share

xcp sync -noatime \\<IP address or hostname of SMB server>\source_share
\\<IP address of SMB destination server>\dest_share
634 scanned, 0 copied, 634 compared, 0 removed, 0 errors
Total Time : 3s
STATUS : PASSED
```

sync -noctime

使用 `-noctime` 参数 `sync` 命令将源中的所有差异同步到目标、但不包括创建时间有差异的文件。

语法

```
xcp sync -noctime \\<IP address or hostname of SMB server>\source_share  
\\<IP address of SMB destination server>\dest_share
```

显示示例

```
c:\netapp\xcp>xcp sync -noctime \\<IP address or hostname of SMB  
server>\source_share \\<IP address of SMB destination  
server>\dest_share  
xcp sync -noctime \\<IP address or hostname of SMB server>\source_share  
\\<IP address of SMB destination server>\dest_share  
  
xcp sync -noctime \\<IP address or hostname of SMB server>\source_share  
\\<IP address of SMB destination server>\dest_share  
634 scanned, 0 copied, 634 compared, 0 removed, 0 errors  
Total Time : 3s  
STATUS : PASSED
```

sync -nomtime

使用 `-nomtime` 参数 `sync` 命令将源中的所有差异同步到目标，但不包括修改时间只有差异的文件。(此选项已弃用。如果 `sync` 命令没有此选项，命令将继续运行。)

语法

```
xcp sync -nomtime \\<IP address or hostname of SMB server>\source_share  
\\<IP address of SMB destination server>\dest_share
```

显示示例

```
c:\netapp\xcp>xcp sync -nomtime \\<IP address or hostname of SMB  
server>\source_share \\<IP address of SMB destination  
server>\dest_share  
xcp sync -nomtime \\<IP address or hostname of SMB server>\source_share  
\\<IP address of SMB destination server>\dest_share  
  
xcp sync -nomtime \\<IP address or hostname of SMB server>\source_share  
\\<IP address of SMB destination server>\dest_share  
634 scanned, 0 copied, 634 compared, 0 removed, 0 errors  
Total Time : 3s  
STATUS : PASSED
```

sync -noattrrs

使用 `-noattrrs` 参数 `sync` 命令将源中的所有差异同步到目标、但不包括仅在文件属性方面存在差异的文件。XCP 仅在文件包含不同内容时才会复制该文件(传输ACL)。

语法

```
xcp sync -noattrrs \\<IP address or hostname of SMB server>\source_share  
\\<IP address of SMB destination server>\dest_share
```

显示示例

```
c:\netapp\xcp>xcp sync -noattrrs \\<IP address or hostname of SMB  
server>\source_share \\<IP address of SMB destination  
server>\dest_share  
xcp sync -noattrrs \\<IP address or hostname of SMB  
server>\source_share \\<IP address of SMB destination  
server>\dest_share  
  
xcp sync -noattrrs \\<IP address or hostname of SMB server>\source_share  
\\<IP address of SMB destination server>\dest_share  
634 scanned, 0 copied, 634 compared, 0 removed, 0 errors  
Total Time : 3s  
STATUS : PASSED
```

sync -noownership

使用 `-noownership` 参数 `sync` 命令将源的所有差异同步到目标、但不包括所有权差异的文件。

语法

```
xcp sync -noownership \\<IP address or hostname of SMB  
server>\vol_SMB_source_xxxxxx \\<IP address of SMB destination  
server>\vol_SMB_target_xxxxxx
```

```
>xcp sync -acl -noownership -fallback-user "DOMAIN\User" -fallback
-group "DOMAIN\Group" \\<source_IP_address>\source_share \\<IP address
of SMB destination server>\dest_share
```

Truncated Output

```
302,909 scanned,    301,365 compared,    0 errors, 0 skipped,    0
copied, 0 removed, 9m46s
307,632 scanned,    303,530 compared,    0 errors, 0 skipped,    0
copied, 0 removed, 9m51s
308,434 scanned,    305,462 compared,    0 errors, 0 skipped,    0
copied, 0 removed, 9m56s
310,824 scanned,    307,328 compared,    0 errors, 0 skipped,    0
copied, 0 removed, 10m1s
313,238 scanned,    310,083 compared,    0 errors, 0 skipped,    0
copied, 0 removed, 10m6s
314,867 scanned,    313,407 compared,    0 errors, 0 skipped,    0
copied, 0 removed, 10m11s
318,277 scanned,    315,856 compared,    0 errors, 0 skipped,    0
copied, 0 removed, 10m17s
321,005 scanned,    318,384 compared,    0 errors, 0 skipped,    0
copied, 0 removed, 10m22s
322,189 scanned,    321,863 compared,    0 errors, 0 skipped,    0
copied, 0 removed, 10m27s
323,906 scanned,    323,906 compared,    0 errors, 0 skipped,    0
copied, 0 removed, 10m29s
```

```
xcp sync -acl -noownership -fallback-user "DOMAIN\User" -fallback-group
"DOMAIN\Group" \\<source_IP_address>\source_share \\<IP address of SMB
destination server>\dest_share
```

```
323,906 scanned, 0 copied, 323,906 compared, 0 removed, 0 errors
```

```
Total Time : 10m29s
```

```
STATUS : PASSED
```

sync -地点对点<float>

使用 `-atimewindow <float>` 参数 `sync` 命令以指定文件从源到目标的可接受差值(以秒为单位)。如果时间差异小于<value>、则XCP不会将文件报告为不同。

语法

```
xcp sync -atimewindow <float> \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination server>\dest_share
```

在以下示例中、XCP接受源文件和目标文件之间的最多10分钟时间差异、并且不会更新目标上的时间。

显示示例

```
c:\netapp\xcp>xcp sync -atimewindow 600 \\<IP address or hostname of
SMB server>\source_share \\<IP address of SMB destination
server>\source_share
xcp sync -atimewindow 600 \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination
server>\source_share

xcp sync -atimewindow 600 \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination
server>\source_share
634 scanned, 0 copied, 634 compared, 0 removed, 0 errors
Total Time : 3s
STATUS : PASSED
```

sync -cdiewindow <float>

使用 `-ctimewindow <float>` 参数 `sync` 命令以指定文件从源到目标的可接受差异(以秒为单位)。当 `ctime` 的差异小于 `<value>` 时、XCP不会将文件报告为不同。

语法

```
xcp sync -ctimewindow <float> \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination server>\dest_share
```

在以下示例中、XCP接受源文件和目标文件之间长达10分钟的时间差、并且不会更新目标上的 `ctime`。

显示示例

```
c:\netapp\xcp>xcp sync -ctimewindow 600 \\<IP address or hostname of
SMB server>\source_share \\<IP address of SMB destination
server>\dest_share
xcp sync -ctimewindow 600 \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination
server>\dest_share

xcp sync -ctimewindow 600 \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination
server>\dest_share
634 scanned, 0 copied, 634 compared, 0 removed, 0 errors
Total Time : 3s
STATUS : PASSED
```

sync -mtimewindow <float>

使用 `-mtimewindow <float>` 参数 `sync` 命令以指定文件从源到目标的mtime的可接受差值(以秒为单位)。当mtime的差异小于<value>时、XCP不会将文件报告为不同。

语法

```
xcp sync -mtimewindow <float> \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination server>\dest_share
```

显示示例

```
c:\netapp\xcp>xcp sync -mtimewindow 600 \\<IP address or hostname of
SMB server>\source_share \\<IP address of SMB destination
server>\dest_share
xcp sync -mtimewindow 600 \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination
server>\dest_share

xcp sync -mtimewindow 600 \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination
server>\dest_share
634 scanned, 0 copied, 634 compared, 0 removed, 0 errors Total Time :
3s
STATUS : PASSED
```

sync -acl -reallback-user <fallback_user>-reallback-group <fallback_group>

使用 `-acl`, `-fallback-user` 和 `-fallback-group` 参数 `sync` 命令将源的数据和安全信息与目标进行比较、并对目标应用所需的操作。。 `-fallback-user` 和 `-fallback-group` 选项是指目标计算机或Active Directory中接收本地(非域)源用户或组权限的用户或组。



您不能使用 `-acl` 选项 `-fallback-user` 和 `-fallback-group` 选项

语法

```
xcp sync -acl -fallback-user <fallback_user> -fallback-group  
<fallback_group> \\<IP address or hostname of SMB  
server>\performance_SMB_home_dirs \\<IP address of SMB destination  
server>\performance_SMB_home_dirs
```



```
C:\xcp>xcp sync -acl -fallback-user "DOMAIN\User" -fallback-group
"DOMAIN\Group" \\<IP address or hostname of SMB server>\source_share
\\<IP address of SMB destination server>\dest_share
10,796 scanned, 4,002 compared, 0 errors, 0 skipped, 0
copied, 0 removed, s
15,796 scanned, 8,038 compared, 0 errors, 0 skipped, 0
copied, 0 removed, 0s
15,796 scanned, 8,505 compared, 0 errors, 0 skipped, 0
copied, 0 removed, 5s
15,796 scanned, 8,707 compared, 0 errors, 0 skipped, 0
copied, 0 removed, 0s
15,796 scanned, 8,730 compared, 0 errors, 0 skipped, 0
copied, 0 removed, 5s
15,796 scanned, 8,749 compared, 0 errors, 0 skipped, 0
copied, 0 removed, 0s
15,796 scanned, 8,765 compared, 0 errors, 0 skipped, 0
copied, 0 removed, 5s
15,796 scanned, 8,786 compared, 0 errors, 0 skipped, 0
copied, 0 removed, 0s
15,796 scanned, 8,956 compared, 0 errors, 0 skipped, 0
copied, 0 removed, 5s
15,796 scanned, 9,320 compared, 0 errors, 0 skipped, 0
copied, 0 removed, 0s
15,796 scanned, 9,339 compared, 0 errors, 0 skipped, 0
copied, 0 removed, 5s
15,796 scanned, 9,363 compared, 0 errors, 0 skipped, 0
copied, 0 removed, m0s
15,796 scanned, 10,019 compared, 0 errors, 0 skipped, 0
copied 0 removed, 1m5s
15,796 scanned, 10,042 compared, 0 errors, 0 skipped, 0
copied 0 removed, 1m10s
15,796 scanned, 10,059 compared, 0 errors, 0 skipped, 0
copied 0 removed, 1m15s
15,796 scanned, 10,075 compared, 0 errors, 0 skipped, 0
copied 0 removed, 1m20s
15,796 scanned, 10,091 compared, 0 errors, 0 skipped, 0
copied 0 removed, 1m25s
15,796 scanned, 10,108 compared, 0 errors, 0 skipped, 0
copied 0 removed, 1m30s
15,796 scanned, 10,929 compared, 0 errors, 0 skipped, 0
copied 0 removed, 1m35s
15,796 scanned, 12,443 compared, 0 errors, 0 skipped, 0
copied 0 removed, 1m40s
```

```

15,796 scanned, 13,963 compared, 0 errors, 0 skipped, 0
copied 0 removed, 1m45s
15,796 scanned, 15,488 compared, 0 errors, 0 skipped, 0
copied 0 removed, 1m50s
15,796 scanned, 15,796 compared, 0 errors, 0 skipped, 0
copied 0 removed, 1m51s

xcp sync -acl -fallback-user "DOMAIN\User" -fallback-group
"DOMAIN\Group \\<IP address or hostname of SMB server>\source_share
\\<IP address of SMB destination server>\dest_share
15,796 scanned, 0 copied, 15,796 compared, 0 removed, 0 errors
Total Time : 1m51
STATUS : PASSED

```

sync -l

使用 `-l` 参数 `sync` 命令、用于在标准输出中提供XCP对目标执行的所有操作的详细日志记录信息。

语法

```
xcp sync -l \\<IP address or hostname of SMB server>\source_share \\<IP
address of SMB destination server>\dest_share
```

显示示例

```

c:\netapp\xcp>xcp sync -l \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination
server>\dest_share
xcp sync -l \\<IP address or hostname of SMB server>\source_share \\<IP
address of SMB destination server>\dest_share

File "atime" changed, timestamps set for "agnostic"
File "atime" changed, timestamps set for "<root>"
xcp sync -l \\<IP address or hostname of SMB server>\source_share \\<IP
address of SMB destination server>\dest_share
634 scanned, 0 copied, 634 compared, 0 removed, 0 errors
Total Time : 3s
STATUS : PASSED

```

sync -root

使用 `-root` 参数 `sync` 命令以同步根目录的ACL。

语法

```
xcp sync -acl -root -fallback-user "DOMAIN\User" -fallback-group  
"DOMAIN\Group" \\<IP address or hostname of SMB server>\source_share \\<IP  
address of SMB destination server>\dest_share
```

显示示例

```
C:\NetApp\XCP>xcp sync -acl -root -fallback-user "DOMAIN\User"  
-fallback-group "DOMAIN\Group" \\<IP address or hostname of SMB  
server>\source_share \\<IP address of SMB destination  
server>\dest_share  
  
xcp sync -acl -root -fallback-user "DOMAIN\User" -fallback-group  
"DOMAIN\Group" \\<IP address or hostname of SMB server>\source_share  
\\<IP address of SMB destination server>\dest_share  
12 scanned, 0 copied, 12 compared, 0 skipped, 0 removed, 0 errors, 1  
acls copied  
Total Time : 2s  
STATUS : PASSED
```

sync -onlyacl-reallback-user <fallback_user>-reallback-group <fallback_group>

使用 `-onlyacl`, `-fallback-user`, 和 `-fallback-group` 参数 `sync` 命令以比较源与目标之间的安全信息并对目标应用所需的操作。。 `-fallback-user` 和 `-fallback-group` 是目标计算机或Active Directory中接收本地(非域)源用户或组权限的用户或组。



您不能使用 `-onlyacl` 不带的参数 `-fallback-user` 和 `-fallback-group` 选项

语法

```
xcp sync -onlyacl -fallback-user <fallback_user> -fallback-group  
<fallback_group> \\<IP address or hostname of SMB server>\source_share  
\\<IP address of SMB destination server>\dest_share
```

显示示例

```
C:\Users\ctladmin\Desktop>xcp sync -onlyacl -fallback-user
"DOMAIN\User" -fallback-group "DOMAIN\Group"
\\<source_IP_address>\source_share \\<IP address of SMB destination
server>\dest_share
```

```
8,814 scanned, 0 copied, 620 compared, 0 skipped, 0
removed, 0 errors, 6s
9,294 scanned, 0 copied, 2,064 compared, 0 skipped, 0
removed, 0 errors, 11s
12,614 scanned, 0 copied, 3,729 compared, 0 skipped, 0
removed, 0 errors, 16s
13,034 scanned, 0 copied, 5,136 compared, 0 skipped, 0
removed, 0 errors, 21s
14,282 scanned, 0 copied, 7,241 compared, 0 skipped, 0
removed, 0 errors, 26s
14,282 scanned, 0 copied, 8,101 compared, 0 skipped, 0
removed, 0 errors, 31s
14,282 scanned, 0 copied, 8,801 compared, 0 skipped, 0
removed, 0 errors, 36s
14,282 scanned, 0 copied, 9,681 compared, 0 skipped, 0
removed, 0 errors, 41s
14,282 scanned, 0 copied, 10,405 compared, 0 skipped, 0
removed, 0 errors, 46s
14,282 scanned, 0 copied, 11,431 compared, 0 skipped, 0
removed, 0 errors, 51s
14,282 scanned, 0 copied, 12,471 compared, 0 skipped, 0
removed, 0 errors, 56s
14,282 scanned, 0 copied, 13,495 compared, 0 skipped, 0
removed, 0 errors, 1m1s
14,282 scanned, 0 copied, 14,282 compared, 0 skipped, 0
removed, 0 errors, 1m6s
```

```
xcp sync -onlyacl -preserve-atype -fallback-user "DOMAIN\User"
-fallback-group "DOMAIN\Group" \\<source_IP_address>\source_share \\<IP
address of SMB destination server>\dest_share
14,282 scanned, 0 copied, 14,282 compared, 0 skipped, 0 removed, 0
errors
Total Time : 1m7s
STATUS : PASSED
```

sync -aclverify{yes, no}

使用 `-aclverify{yes, no}` 参数 `sync` 命令以提供在ACL同步操作期间包含或跳过ACL验证的选项。此选项只能与结合使用 `sync -acl` 和 `sync -onlyacl` 命令默认情况下、ACL同步会执行ACL验证。如果您设置了 `-aclverify` 选项 `no`，则可以跳过ACL验证和 `fallback-user` 和 `fallback-group` 不需要选项。如果您设置了 `-aclverify to yes`，则需要 `fallback-user` 和 `fallback-group` 选项、如以下示例所示。

语法

```
xcp sync -acl -aclverify yes -fallback-user <fallback_user> -fallback
-group <fallback_group> \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination server>\dest_share
```

```
C:\NetApp\xcp>xcp sync -acl -aclverify yes -fallback-user "DOMAIN\User"
-fallback-group "DOMAIN\Group" \\<source_IP_address>\source_share \\<IP
address of SMB destination server>\dest_share

25 scanned, 0 copied, 24 compared, 0 skipped, 0 removed, 0 errors, 5s,
0 acls copied
25 scanned, 0 copied, 24 compared, 0 skipped, 0 removed, 0 errors, 10s,
0 acls copied
25 scanned, 0 copied, 24 compared, 0 skipped, 0 removed, 0 errors, 15s,
0 acls copied xcp sync -acl -aclverify yes -fallback-user "DOMAIN\User"
-fallback-group "DOMAIN\Group" \\<source_IP_address>\source_share \\<IP
address of SMB destination server>\dest_share
25 scanned, 1 copied, 25 compared, 0 skipped, 0 removed, 0 errors, 12
acls copied Total Time : 16s
STATUS : PASSED
C:\NetApp\xcp>xcp sync -acl -aclverify no
\\<source_IP_address>\source_share \\<IP address of SMB destination
server>\dest_share

xcp sync -acl -aclverify no \\<source_IP_address>\source_share \\<IP
address of SMB destination server>\dest_share
27 scanned, 1 copied, 27 compared, 0 skipped, 0 removed, 0 errors, 13
acls copied Total Time : 2s
STATUS : PASSED
C:\NetApp\xcp>xcp sync -onlyacl -aclverify yes -fallback-user
"DOMAIN\User" -fallback-group "DOMAIN\Group"
\\<source_IP_address>\source_share \\<IP address of SMB destination
server>\dest_share
24 scanned, 0 copied, 24 compared, 0 skipped, 0 removed, 0 errors, 5s,
0 acls copied
24 scanned, 0 copied, 24 compared, 0 skipped, 0 removed, 0 errors, 10s,
0 acls copied
24 scanned, 0 copied, 24 compared, 0 skipped, 0 removed, 0 errors, 15s,
0 acls copied xcp sync -onlyacl -aclverify yes -fallback-user
"DOMAIN\User" -fallback-group "DOMAIN\Group"
\\<source_IP_address>\source_share \\<IP address of SMB destination
server>\dest_share
C:\NetApp\xcp>xcp sync -onlyacl -aclverify no
\\<source_IP_address>\source_share \\<IP address of SMB destination
server>\dest_share
xcp sync -onlyacl -aclverify no \\<source_IP_address>\source_share
\\<IP address of SMB destination server>\dest_share
24 scanned, 0 copied, 24 compared, 0 skipped, 0 removed, 0 errors, 11
acls copied
```

```
Total Time : 2s
STATUS : PASSED
```

Sync -BS <n>

使用 `-bs <n>` 参数 `sync` 命令以提供读/写块大小。默认大小为1M。

语法

```
xcp.exe sync -bs <n> \\<IP address or hostname of SMB server>\source_share
\\<IP address of SMB destination server>\dest_share
```

显示示例

```
C:\Netapp\xcp>xcp.exe sync -bs 64k \\<source_IP_address>\source_share
\\<IP address of SMB destination server>\dest_share
1,136 scanned, 0 copied, 1,135 compared, 0 skipped, 95 removed, 0
errors, 5s
xcp.exe sync -bs 64k \\<source_IP_address>\source_share \\<IP address
of SMB destination server>\dest_share 1,136 scanned, 283 copied, 1,136
compared, 0 skipped, 283 removed, 0 errors
Total Time : 10s
STATUS : PASSED
```

sync -ADS

使用 `... -ads` 参数 `sync` 用于扫描对源SMB共享和目标SMB共享中备用数据流所做的更改和修改的命令。如果发生更改、则会将更改应用于目标、以确保目标与源完全相同。

语法

```
xcp sync -ads \\<IP address or hostname of SMB server>\source_share \\<IP
address of SMB destination server>\dest_share
```

显示示例

```
C:\netapp\xcp>xcp sync -ads \\<source_IP_address>\source_share\src  
\\<dest_IP_address>\dest_share
```

```
13 scanned, 1 copied, 12 compared, 0 skipped, 0  
removed, 0 errors, 5s, 1 ads copied  
13 scanned, 1 copied, 12 compared, 0 skipped, 0  
removed, 0 errors, 10s, 1 ads copied  
13 scanned, 1 copied, 12 compared, 0 skipped, 0  
removed, 0 errors, 15s, 1 ads copied  
13 scanned, 1 copied, 12 compared, 0 skipped, 0  
removed, 0 errors, 20s, 1 ads copied  
13 scanned, 1 copied, 12 compared, 0 skipped, 0  
removed, 0 errors, 25s, 1 ads copied  
13 scanned, 1 copied, 12 compared, 0 skipped, 0  
removed, 0 errors, 30s, 1 ads copied  
13 scanned, 1 copied, 12 compared, 0 skipped, 0  
removed, 0 errors, 1m0s, 1 ads copied  
13 scanned, 1 copied, 12 compared, 0 skipped, 0  
removed, 0 errors, 2m50s, 1 ads copied  
13 scanned, 1 copied, 12 compared, 0 skipped, 0  
removed, 0 errors, 2m55s, 1 ads copied  
13 scanned, 1 copied, 12 compared, 0 skipped, 0  
removed, 0 errors, 3m0s, 1 ads copied  
13 scanned, 1 copied, 12 compared, 0 skipped, 0  
removed, 0 errors, 3m55s, 1 ads copied  
13 scanned, 1 copied, 12 compared, 0 skipped, 0  
removed, 0 errors, 4m0s, 1 ads copied  
13 scanned, 1 copied, 12 compared, 0 skipped, 0  
removed, 0 errors, 4m55s, 1 ads copied  
13 scanned, 1 copied, 12 compared, 0 skipped, 0  
removed, 0 errors, 5m0s, 1 ads copied  
13 scanned, 1 copied, 12 compared, 0 skipped, 0  
removed, 0 errors, 5m5s, 1 ads copied  
13 scanned, 1 copied, 12 compared, 0 skipped, 0  
removed, 0 errors, 5m10s, 1 ads copied  
13 scanned, 1 copied, 12 compared, 0 skipped, 0  
removed, 0 errors, 5m55s, 1 ads copied  
13 scanned, 1 copied, 12 compared, 0 skipped, 0  
removed, 0 errors, 6m0s, 1 ads copied  
13 scanned, 1 copied, 12 compared, 0 skipped, 0  
removed, 0 errors, 6m5s, 1 ads copied  
xcp sync -ads \\<source_IP_address>\source_share\src  
\\<dest_IP_address>\dest_share
```



```
13 scanned, 1 copied, 13 compared, 0 skipped, 0 removed, 0 errors, 1
ads copied
Total Time : 6m9s
STATUS : PASSED
```

验证

。 `verify` 命令读取并比较源共享和目标共享、并提供有关不同之处的信息。您可以使用 `verify` 命令、而不管用于执行复制或同步操作的工具如何。

语法

```
xcp verify \\<IP address or hostname of SMB server>\source_share \\<IP
address of SMB destination server>\dest_share
```

显示示例

```
c:\netapp\xcp>xcp verify \\<IP address of SMB source
server>\source_share \\<IP address of SMB destination
server>\dest_share
xcp verify \\<IP address of SMB source server>\source_share \\ <IP
address of SMB destination server>\dest_share

xcp verify \\<IP address of SMB source server>\source_share \\<IP
address of SMB destination server>\dest_share
374 scanned, 373 compared, 373 same, 0 different, 0 missing, 0 errors
xcp verify \\<IP address of SMB source server>\source_share \\<IP
address of SMB destination server>\dest_share
Total Time : 3s
STATUS : PASSED
```

下表列出了 `verify` 参数及其问题描述。

参数	Description
验证-h、--help	显示此帮助消息并退出。
[验证-v]	增加调试详细信息。
<<smb_verify_parallel,验证-并行(); n	并发进程数(默认值: <cpu-count>)。
<<smb_verify_match,验证-匹配过滤器	仅处理与筛选器匹配的文件和目录(请参见 <code>xcp help - match</code> 有关详细信息、请参见)。
<<smb_verify_exclude,验证-排除(); 过滤器();	仅在筛选器中排除文件和目录。

参数	Description
[验证-保留-数据]	还原源上上次访问的日期。
[验证-nobdata]	请勿检查数据。
验证-地点	验证文件访问时间。
[验证-noctime]	请勿检查文件创建时间。
[验证-nomtime]	请勿检查文件修改时间。
[验证-noatts]	不检查属性。
[验证-no所有权]	请勿检查所有权。
验证-ADS	扫描源SMB共享和目标SMB共享中备用数据流的更改和修改。如果存在更改、则会将更改应用于的目标确保目标与源完全相同。
[验证-noacls]	请勿检查ACL。
<<verify_smb_atime,验证-atiewindow (); 浮点();	可接受的访问时间差(以秒为单位)。
<<verify_smb_ctime,验证-ctimewindow (); 浮点型();	可接受的创建时间差(以秒为单位)。
<<verify_smb_mtime,验证-mtmewindow (); 浮点型());	可接受的修改时间差(以秒为单位)、
[验证-stats.]	并行扫描源树和目标树并比较树统计信息。
[验证-I]	增加输出详细信息。
[验证-II]	增加输出详细信息(git差异格式)。
<<verify_smb_acl,验证-fallback-user	目标计算机上用于接收本地(非域)源计算机用户权限的Active Directory用户或本地(非域)用户(例如： domain\administrator)。
<<verify_smb_acl,验证-fallback-group	目标计算机上用于接收本地(非域)源计算机组(例如： domain\administrators)权限的Active Directory组或本地(非域)组。
验证-root	同步根目录的ACL。
验证-onlyacl	仅复制安全信息。

验证-h、--help

使用 -h 和 --help 参数 verify 命令以显示有关的详细信息 verify 命令

语法

```
xcp verify -help
```

```
C:\Netapp\xcp>xcp verify -help
usage: xcp verify [-h] [-v] [-parallel <n>] [-match <filter>] [-exclude
<filter>] [-preserve-atime]
[-loglevel <name>] [-fallback-user FALLBACK_USER]
[-fallback-group FALLBACK_GROUP] [-noacls] [-nodata] [-stats] [-l] [-
root] [-noownership] [-onlyacl] [-noctime] [-nomtime] [-noattrs] [-
atime]
[-atimewindow <float>] [-ctimewindow <float>] [-mtimewindow <float>] [-
ads] source target
```

Note: ONTAP does not let a SMB client modify COMPRESSED or ENCRYPTED attributes. XCP sync will ignore these file attributes.

positional arguments:

```
source
target
```

optional arguments:

```
-h, --help          show this help message and exit
-v                  increase debug verbosity
-parallel <n>      number of concurrent processes (default: <cpu-
count>)
-match <filter>    only process files and directories that match
the filter (see `xcp help -match` for details)
-exclude <filter>  Exclude files and directories that match the
filter (see `xcp help -exclude` for details)
-preserve-atime    restore last accessed date on source
--help-diag        Show all options including diag.The diag options
should be used only on recommendation by NetApp support.
-loglevel <name>   option to set log level filter (default:INFO)
-fallback-user FALLBACK_USER
                    a user on the target machine to translate the
permissions of local (non-domain) source machine users (eg.
domain\administrator)
-fallback-group FALLBACK_GROUP
                    a group on the target machine to translate the
permissions of local (non- domain) source machine groups (eg.
domain\administrators)
-nodata            do not check data
-stats             scan source and target trees in parallel and
compare tree statistics
-l                detailed file listing output
-root              verify acl for root directory
-noacls            do not check acs
```

```

-noownership          do not check ownership
-onlyacl              verify only acls
-noctime              do not check file creation time
-nomtime              do not check file modification time
-noattrs              do not check attributes
-atime                verify access time as well
-atimewindow <float> acceptable access time difference in seconds
-ctimewindow <float> acceptable creation time difference in seconds
-mtimewindow <float> acceptable modification time difference in
seconds
-ads                  verify ntfs alternate data stream

```

验证-v

使用 -v 参数 verify 命令以提供详细的调试信息。

语法

```
xcp verify -v \\<IP address of SMB source server>\source_share address of
SMB destination server>\dest_share
```

显示示例

```

c:\netapp\xcp> xcp verify -v \\<IP address of SMB source
server>\source_share address of SMB destination server>\dest_share
xcp verify -v \\<IP address of SMB source server>\source_share \\<IP
address of SMB destination server>\dest_share

xcp verify -v \\< IP address of SMB source server>\source_share \\<IP
address of SMB destination server>\dest_share
374 scanned, 373 compared, 373 same, 0 different, 0 missing, 0 errors
Total Time : 3s
STATUS : PASSED

```

验证-parallel 并口<n>

使用 -parallel <n> 参数 verify 命令以设置更多或更少的XCP并发进程数。。 verify -parallel <n> 命令用于验证并发进程的数量(默认值: <cpu-count>)。



n的最大值为61。

语法

```
xcp verify -v -parallel <n> \\<IP address of SMB source
server>\source_share \\<IP address of SMB destination server>\dest_share
```

显示示例

```
c:\netapp\xcp>xcp verify -v -parallel 8 \\<IP address of SMB source
server>\source_share \\<IP address of SMB destination
server>\dest_share
xcp verify -v -parallel 8 \\<IP address of SMB source
server>\source_share \\<IP address of SMB destination
server>\dest_share

xcp verify -v -parallel 8 \\<IP address of SMB source
server>\source_share \\<IP address of SMB destination
server>\dest_share
374 scanned, 373 compared, 373 same, 0 different, 0 missing, 0 errors
Total Time : 4s
STATUS : PASSED
```

验证-match <filter>

使用 `-match <filter>` 参数 `verify` 命令以扫描源树和目标树、并仅比较与筛选器参数匹配的文件或目录。如果存在任何差异、该命令会对目标应用所需的操作、以使其保持同步。

语法

```
xcp verify -v -match <filter> \\<IP address of SMB source
server>\source_share \\<IP address of SMB destination server>\dest_share
```

显示示例

```
c:\netapp\xcp>xcp verify -v -match "'Microsoft' in name" \\<IP address
of SMB source server>\source_share \\<IP address of SMB destination
server>\dest_share
xcp verify -v -match "'Microsoft' in name" \\<IP address of SMB source
server>\source_share \\<IP address of SMB destination
server>\dest_share

xcp verify -v -match 'Microsoft' in name \\<IP address of SMB source
server> \source_share \\<IP address of SMB destination
server>\dest_share
374 scanned, 0 compared, 0 same, 0 different, 0 missing, 0 errors
Total Time : 1s
STATUS : PASSED
```

验证-排除<filter>

使用 `-exclude <filter>` 参数 `verify` 命令以仅排除筛选器中的文件和目录。

语法

```
xcp verify -exclude <filter> \\<IP address of SMB source
server>\source_share \\<IP address of SMB destination server>\dest_share
```

显示示例

```
C:\netapp\xcp>xcp verify -exclude "path('*Exceptions*')" \\<IP address
of SMB sourceserver>\source_share \\<IP address of SMB destination
server>\dest_share

210 scanned, 99 excluded, 6 compared, 5 same, 1 different, 0 missing, 0
errors, 5s
210 scanned, 107 excluded, 13 compared, 12 same, 1 different, 0
missing, 0 errors, 10s
210 scanned, 107 excluded, 13 compared, 12 same, 1 different, 0
missing, 0 errors, 15s
210 scanned, 107 excluded, 13 compared, 12 same, 1 different, 0
missing, 0 errors, 20s
335 scanned, 253 excluded, 13 compared, 12 same, 1 different, 0
missing, 0 errors, 25s
445 scanned, 427 excluded, 15 compared, 14 same, 1 different, 0
missing, 0 errors, 30s
445 scanned, 427 excluded, 15 compared, 14 same, 1 different, 0
missing, 0 errors, 35s
445 scanned, 427 excluded, 15 compared, 14 same, 1 different, 0
missing, 0 errors, 40s
445 scanned, 427 excluded, 15 compared, 14 same, 1 different, 0
missing, 0 errors, 45s
445 scanned, 427 excluded, 16 compared, 15 same, 1 different, 0
missing, 0 errors, 50s
xcp verify -exclude path('*Exceptions*') \\<IP address of SMB
sourceserver>\source_share \\<IP address of SMB destination
server>\dest_share
445 scanned, 427 excluded, 17 compared, 17 same, 0 different, 0
missing, 0 errors
Total Time : 1m11s
STATUS : PASSED
```

验证-保留-数据

使用 `-preserve-atime` 参数 `verify` 命令进行重置 `atime` 到XCP读取文件之前的原始值。

语法

```
xcp verify -preserve-atime \\<IP address of SMB source
server>\source_share \\<IP address of SMB destination server>\dest_share
```

显示示例

```
c:\netapp\xcp>xcp verify -preserve-atime \\<IP address of SMB source
server>\source_share \\<IP address of SMB destination
server>\dest_share
xcp verify -preserve-atime \\<IP address of SMB source
server>\source_share \\<IP address of SMB destination
server>\dest_share

374 scanned, 179 compared, 179 same, 0 different, 0 missing, 0 errors,
5s
xcp verify -preserve-atime \\<IP address of SMB source
server>\source_share \\<IP address of SMB destination
server>\dest_share
374 scanned, 373 compared, 373 same, 0 different, 0 missing, 0 errors
Total Time : 8s
STATUS : PASSED
```

验证-nobdata

使用 -nodata 参数 verify 命令不比较数据。

语法

```
xcp verify -nodata \\<IP address of SMB source server>\source_share \\<IP
address of SMB destination server>\dest_share
```

显示示例

```
c:\netapp\xcp>xcp verify -nodata \\<IP address of SMB source
server>\source_share \\<IP address of SMB destination
server>\dest_share
xcp verify -nodata \\<IP address of SMB source server>\source_share
\\<IP address of SMB destination server>\dest_share

xcp verify -nodata \\<IP address of SMB source server> \source_share
\\<IP address of SMB destination server>\dest_share : PASSED
374 scanned, 373 compared, 373 same, 0 different, 0 missing, 0 errors
Total Time : 3s
STATUS : PASSED
```


验证-地点

使用 `-atime` 参数 `verify` 命令、用于比较源与目标之间的文件访问时间戳。

语法

```
xcp verify -ll -atime \\<IP address of SMB source server>\source_share  
\\<IP address of SMB destination server>\dest_share
```

显示示例

```
c:\Netapp\xcp> xcp verify -ll -atime \\<IP address of SMB source  
server>\source_share \\<IP address of SMB destination  
server>\dest_share  
  
WARNING: your license will expire in less than one week! You can renew  
your license at https://xcp.netapp.com  
dir1: Changed (atime)  
  atime  
    - 2023-04-14 10:28:47 (1681482527.564423)  
    + 2023-04-14 10:24:40 (1681482280.366317)  
dir2: Changed (atime)  
  atime  
    - 2023-04-14 10:28:47 (1681482527.564424)  
    + 2023-04-14 10:24:40 (1681482280.366318)  
<root>: Changed (atime)  
  atime  
    - 2023-04-14 10:28:47 (1681482527.054403)  
    + 2023-04-14 10:28:35 (1681482515.538801)  
xcp verify -ll -atime \\<IP address of SMB source server>\source_share  
\\<IP address of SMB destination server>\dest_share  
14 scanned, 13 compared, 10 same, 3 different, 0 missing, 0 errors  
Total Time : 1s  
STATUS : FAILED
```

验证-noctime

使用 `-noctime` 参数 `verify` 命令、用于不比较源与目标之间的文件创建时间戳。

语法

```
xcp verify -noctime \\<IP address of SMB source server>\source_share \\<IP  
address of SMB destination server>\dest_share
```

显示示例

```
c:\netapp\xcp>xcp verify -noctime \\<IP address of SMB source
server>\source_share \\<IP address of SMB destination
server>\dest_share
xcp verify -noctime \\<IP address of SMB source server>\source_share
\\<IP address of SMB destination server>\dest_share

xcp verify -noctime \\<IP address of SMB source server>\source_share
\\<IP address of SMB destination server>\dest_share : PASSED
374 scanned, 373 compared, 373 same, 0 different, 0 missing, 0 errors
Total Time : 3s
STATUS : PASSED
```

验证-nomtime

使用 `-nomtime` 参数 `verify` 用于不比较源与目标之间的文件修改时间戳的命令。

语法

```
xcp verify -nomtime \\<IP address of SMB source server>\source_share \\<IP
address of SMB destination server>\dest_share
```

显示示例

```
c:\netapp\xcp>xcp verify -nomtime \\<IP address of SMB source
server>\source_share \\<IP address of SMB destination
server>\dest_share
xcp verify -nomtime \\<IP address of SMB source server>\source_share
\\<IP address of SMB destination server>\dest_share

xcp verify -nomtime \\<IP address of SMB source server>\source_share
\\<IP address of SMB destination server>\dest_share : PASSED
374 scanned, 373 compared, 373 same, 0 different, 0 missing, 0 errors
Total Time : 3s
STATUS : PASSED
```

验证-noatts

使用 `-noattrs` 参数 `verify` 命令不检查属性。

语法

```
xcp verify -noattrs \\<IP address of SMB source server>\source_share \\<IP address of SMB destination server>\dest_share
```

显示示例

```
c:\netapp\xcp>xcp verify -noattrs \\<IP address of SMB source server>\source_share \\<IP address of SMB destination server>\dest_share
xcp verify -noattrs \\<IP address of SMB source server>\source_share \\<IP address of SMB destination server>\dest_share

xcp verify -noattrs \\<IP address of SMB source server>\source_share \\<IP address of SMB destination server>\dest_share : PASSED
374 scanned, 373 compared, 373 same, 0 different, 0 missing, 0 errors
Total Time : 3s
STATUS : PASSED
```

验证-no所有权

使用 `-noownership` 参数 `verify` 命令不检查所有权。

语法

```
xcp verify -noownership \\<IP address of SMB source server>\source_share \\<IP address of SMB destination server>\dest_share
```

显示示例

```
c:\netapp\xcp>xcp verify -noownership \\<IP address of SMB source
server>\source_share \\<IP address of SMB destination
server>\dest_share
xcp verify -noownership \\<IP address of SMB source
server>\source_share \\<IP address of SMB destination
server>\dest_share

xcp verify -noownership \\<IP address of SMB source
server>\source_share \\<IP address of SMB destination
server>\dest_share : PASSED
374 scanned, 373 compared, 373 same, 0 different, 0 missing, 0 errors
Total Time : 3s
STATUS : PASSED
```

验证-ADS

使用 `-ads` 参数 `verify` 此命令用于读取源和目标上是否存在任何备用数据流、并显示任何差异。

语法

```
xcp verify -ads \\<IP address or hostname of SMB server>\source_share
\\<IP address of SMB destination server>\dest_share
```

```
c:\netapp\xcp>xcp verify -ads \\<source_IP_address>\source_share\src
\\<dest_IP_address>\dest_share
```

```

7 scanned, 5 compared, 5 same, 0 different, 0
missing, 0 errors, 5s
7 scanned, 5 compared, 5 same, 0 different, 0
missing, 0 errors, 10s
7 scanned, 5 compared, 5 same, 0 different, 0
missing, 0 errors, 1m0s
7 scanned, 5 compared, 5 same, 0 different, 0
missing, 0 errors, 1m55s
7 scanned, 5 compared, 5 same, 0 different, 0
missing, 0 errors, 2m0s
7 scanned, 5 compared, 5 same, 0 different, 0
missing, 0 errors, 2m5s
7 scanned, 5 compared, 5 same, 0 different, 0
missing, 0 errors, 2m55s
7 scanned, 5 compared, 5 same, 0 different, 0
missing, 0 errors, 3m0s
7 scanned, 5 compared, 5 same, 0 different, 0
missing, 0 errors, 3m5s
7 scanned, 5 compared, 5 same, 0 different, 0
missing, 0 errors, 3m55s
7 scanned, 5 compared, 5 same, 0 different, 0
missing, 0 errors, 4m55s
7 scanned, 5 compared, 5 same, 0 different, 0
missing, 0 errors, 5m0s
7 scanned, 5 compared, 5 same, 0 different, 0
missing, 0 errors, 5m5s
7 scanned, 5 compared, 5 same, 0 different, 0
missing, 0 errors, 5m55s
7 scanned, 5 compared, 5 same, 0 different, 0
missing, 0 errors, 6m0s
7 scanned, 5 compared, 5 same, 0 different, 0
missing, 0 errors, 6m5s
7 scanned, 5 compared, 5 same, 0 different, 0
missing, 0 errors, 6m10s
7 scanned, 5 compared, 5 same, 0 different, 0
missing, 0 errors, 7m0s
7 scanned, 5 compared, 5 same, 0 different, 0
missing, 0 errors, 7m5s
7 scanned, 5 compared, 5 same, 0 different, 0
missing, 0 errors, 7m55s

```

```
7 scanned, 5 compared, 5 same, 0 different, 0
missing, 0 errors, 8m0s
```

```
xcp verify -ads \\source_ip_address>\source_share\src
\\<dest_ip_address>\dest_share
7 scanned, 6 compared, 6 same, 0 different, 0 missing, 0 errors
Total Time : 8m4s
STATUS : PASSED
```

验证-noacls

使用 -noacls 参数 verify 命令不检查ACL。

语法

```
xcp verify -noacls -noownership \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination server>\dest_share
```

显示示例

```
c:\netapp\xcp>xcp verify -noacls -noownership \\<IP address or hostname
of SMB server>\source_share \\<IP address of SMB destination
server>\dest_share
xcp verify -noacls -noownership \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination
server>\dest_share

xcp verify -noacls -noownership \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination
server>\dest_share
318 scanned, 317 compared, 317 same, 0 different, 0 missing, 0 errors
Total Time : 1s
STATUS : PASSED
```

验证-noacls -no所有权

使用 -noownership 带的参数 verify -noacls 不检查从源到目标的ACL或所有权。

语法

```
xcp verify -noacls -noownership <source> <target>
```

验证-点对点<float>

使用 `-atimewindow <float>` 参数 `verify` 命令以指定的可接受差值(以秒为单位) `atime` 从源到目标的文件。如果中存在差异、则XCP不会将文件报告为不同 `atime` 小于<value>。。 `verify - atimewindow` 命令只能与结合使用 `-atime` 标志。

语法

```
xcp verify -atimewindow <float> \\<IP address of SMB source
server>\source_share \\<IP address of SMB destination server>\dest_share
```

显示示例

```
c:\Netapp\xcp> xcp verify -atimewindow 600 -atime \\<IP address of SMB
source server>\source_share \\<IP address of SMB destination
server>\dest_share

xcp verify -atimewindow 600 -atime \\<IP address of SMB source
server>\source_share \\<IP address of SMB destination
server>\dest_share

14 scanned, 13 compared, 13 same, 0 different, 0 missing, 0 errors
```

验证-ctimewindow <float>

使用 `-ctimewindow <float>` 参数 `verify` 命令以指定的可接受差值(以秒为单位) `ctime` 从源到目标的文件。当中存在差异时、XCP不会将文件报告为不同 `ctime` 小于<value>。

语法

```
xcp verify -ctimewindow <float> \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination server>\dest_share
```

显示示例

```
c:\netapp\xcp>xcp verify -ctimewindow 600 \\<IP address of SMB
sourceserver>\source_share \\<IP address of SMB destination
server>\dest_share
xcp verify -ctimewindow 600 \\<IP address of SMB source
server>\source_share \\<IP address of SMB destination
server>\dest_share

xcp verify -ctimewindow 600 \\<IP address of SMB source
server>\source_share \\<IP address of SMB destination
server>\dest_share
374 scanned, 373 compared, 373 same, 0 different, 0 missing, 0 errors
Total Time : 3s
STATUS : PASSED
```

验证-**mtimewindow** <float>

使用 **-mtimewindow** <float> 参数 **verify** 命令以指定的可接受差值(以秒为单位) **mtime** 从源到目标的文件。当中存在差异时、XCP不会将文件报告为不同 **mtime** 小于<value>。

语法

```
xcp verify -mtimewindow <float> \\<IP address of SMB
sourceserver>\source_share \\<IP address of SMB destination
server>\dest_share
```

显示示例

```
c:\netapp\xcp>xcp verify -mtimewindow 600 \\<IP address of SMB
sourceserver>\source_share \\<IP address of SMB destination
server>\dest_share
xcp verify -mtimewindow 600 \\<IP address of SMB source
server>\source_share \\<IP address of SMB destination
server>\dest_share

xcp verify -mtimewindow 600 \\<IP address of SMB source
server>\source_share \\<IP address of SMB destination
server>\dest_share
374 scanned, 373 compared, 373 same, 0 different, 0 missing, 0 errors
Total Time : 3s
STATUS : PASSED
```


验证-stats.

使用 `-stats` 参数 `verify` 命令扫描源和目标、并打印显示两个共享之间相似或不同之处的树统计信息报告。

语法

```
xcp verify -stats \\<IP address or hostname of SMB server>\source_share  
\\<IP address of SMB destination server>\dest_share
```



```

c:\netapp\xcp>xcp verify -stats \\<IP address or hostname of SMB
server>\source_share \\<IP address of SMB destination
server>\dest_share
xcp verify -stats \\<IP address or hostname of SMB server>\source_share
\\<IP address of SMB destination server>\dest_share

    == Number of files ==
                empty    <8KiB    8-64KiB    64KiB-1MiB    1-10MiB    10-
100MiB    >100MiB
                        81        170        62        2
on-target                same    same    same    same
on-source                same    same    same    same

    == Directory entries ==
                empty    1-10    10-100    100-1K    1K-10K
>10K
                        1        1
on-target                same    same
on-source                same    same

    == Depth ==
                0-5    6-10    11-15    16-20    21-100
>100
                317
on-target                same
on-source                same

    == Modified ==
                >1 year    >1 month    1-31 days    1-24 hrs    <1 hour
<15 mins    future    invalid
                315        2
on-target                same    same
on-source                same    same

Total count: 317 / same / same
Directories: 2 / same / same
Regular files: 315 / same / same
Symbolic links:
Junctions:
Special files:
xcp verify -stats \\<IP address or hostname of SMB server>\source_share
\\<IP address of SMB destination server>\dest_share
635 scanned, 0 errors Total Time : 1s
STATUS : PASSED

```

验证-I

使用 `-l` 参数 `verify` 命令列出源和目标上的文件和目录之间的差异。

语法

```
xcp verify -l \\<IP address of SMB source server>\source_share \\<IP  
address of SMB destination server>\dest_share
```

在以下示例中、复制期间未传输所有权信息、您可以在命令输出中看到这些差异。

显示示例

```
c:\netapp\xcp>xcp verify -l \\<IP address of SMB source  
server>\source_share \\<IP address of SMB destination  
server>\dest_share  
xcp verify -l \\<IP address of SMB source server>\source_share \\<IP  
address of SMB destination server>\dest_share  
  
xcp verify -l \\<IP address of SMB source server>\source_share \\<IP  
address of SMB destination server>\dest_share  
374 scanned, 373 compared, 373 same, 0 different, 0 missing, 0 errors  
Total Time : 3s  
STATUS : PASSED
```

验证-II

使用 `-ll` 参数 `verify` 命令、列出文件或目录与源和目标之间的详细差异。格式类似于git比较。红色值是来自源的旧值、绿色值是来自目标的新值。

语法

```
xcp verify -ll \\<IP address of SMB source server>\source_share \\<IP  
address of SMB destination server>\dest_share
```

显示示例

```
c:\netapp\xcp>xcp verify -ll \\<IP address of SMB source
server>\source_share \\<IP address of SMB destination
server>\dest_share
xcp verify -ll \\<IP address of SMB source server>\source_share \\<IP
address of SMB destination server>\dest_share

xcp verify -ll \\<IP address of SMB source server>\source_share \\<IP
address of SMB destination server>\dest_share
374 scanned, 373 compared, 373 same, 0 different, 0 missing, 0 errors
Total Time : 3s
STATUS : PASSED
```

verify-fallback-user <fallback_user>-fallback-group <fallback_group>

使用 `-fallback-user` 和 `-fallback-group` 参数 `verify` 命令列出源和目标上的文件和目录之间的ACL和所有权差异。



如果您使用 `fallback-user` 和 `fallback-group` 对于复制或同步操作、NetApp建议您也使用 `fallback-user` 和 `fallback-group` 参数与验证操作。

语法

```
xcp verify -fallback-user <fallback_user> -fallback-group <fallback_group>
\\<IP address of SMB source server>\source_share \\<IP address of SMB
destination server>\dest_share
```

验证-no所有权-reallback-user <fallback_user>-reallback-group <fallback_group>

使用 `-noownership`, `-fallback-user`, 和 `-fallback-group` 参数 `verify` 命令列出ACL差异并跳过源和目标上的文件和目录之间的所有权验证。

语法

```
xcp verify -noownership -fallback-user <fallback_user> -fallback-group
<fallback_group> \\<IP address of SMB source server>\source_share \\<IP
address of SMB destination server>\dest_share
```

验证-noacls-reallback-user <fallback_user>-reallback-group <fallback_group>

使用 `-noacls`, `-fallback-user`, 和 `-fallback-group` 参数 `verify` 命令以跳过ACL验证并验证源和目标上的文件和目录之间的所有权。

语法

```
xcp verify -noacIs -fallback-user <fallback_user> -fallback-group  
<fallback_group> \\<IP address of SMB source server>\source_share \\<IP  
address of SMB destination server>\dest_share
```

验证-root

使用 `-root` 参数 `verify` 命令以同步根目录的ACL。

语法

```
xcp verify -root -fallback-user <fallback_user> -fallback- group  
<fallback_group> \\<IP address of SMB source server>\source_share \\<IP  
address of SMB destination server>\dest_share
```

显示示例

```
C:\NetApp\XCP>xcp verify -root -fallback-user "DOMAIN\User" -fallback  
-group "DOMAIN\Group" \\<IP address of SMB source server>\source_share  
\\<IP address of SMB destination server>\dest_share  
  
xcp verify -l -root -fallback-user "DOMAIN\User" -fallback-group  
"DOMAIN\Group" \\<IP address of SMB source server>\source_share \\<IP  
address of SMB destination server>\dest_share  
7 scanned, 6 compared, 6 same, 0 different, 0 missing, 0 errors  
Total Time : 1s  
STATUS : PASSED
```

验证-onlyacl -reallback-user <fallback_user>-reallback- group <fallback_group>

使用 `-onlyacl`, `-fallback-user` 和 `-fallback-group` 参数 `verify` 命令仅比较源和目标之间的安全信息。

语法

```
xcp verify -onlyacl -preserve-atime -fallback-user <fallback_user>  
-fallback- group <fallback_group> \\<IP address of SMB source  
server>\source_share \\<IP address of SMB destination server>\dest_share
```

显示示例

```
C:\Users\ctladmin\Desktop>xcp verify -onlyacl -preserve-atime -fallback
-user "DOMAIN\User" -fallback- group "DOMAIN\Group" -ll
\\<source_IP_address>\source_share \\<IP address of SMB destination
server>\dest_share

4,722 scanned, 0 compared, 0 same, 0 different, 0 missing, 0
errors, 5s
7,142 scanned, 120 compared, 120 same, 0 different, 0 missing, 0
errors, 10s
7,142 scanned, 856 compared, 856 same, 0 different, 0 missing, 0
errors, 15s
7,142 scanned, 1,374 compared, 1,374 same, 0 different, 0 missing,
0 errors, 20s
7,142 scanned, 2,168 compared, 2,168 same, 0 different, 0 missing,
0 errors, 25s
7,142 scanned, 2,910 compared, 2,910 same, 0 different, 0 missing,
0 errors, 30s
7,142 scanned, 3,629 compared, 3,629 same, 0 different, 0 missing,
0 errors, 35s
7,142 scanned, 4,190 compared, 4,190 same, 0 different, 0 missing,
0 errors, 40s
7,142 scanned, 4,842 compared, 4,842 same, 0 different, 0 missing,
0 errors, 45s
7,142 scanned, 5,622 compared, 5,622 same, 0 different, 0 missing,
0 errors, 50s
7,142 scanned, 6,402 compared, 6,402 same, 0 different, 0 missing,
0 errors, 55s
7,142 scanned, 7,019 compared, 7,019 same, 0 different, 0 missing,
0 errors, 1m0s

xcp verify -onlyacl -preserve-atime -fallback-user "DOMAIN\User"
-fallback-group "DOMAIN\Group" -ll \\<source_IP_address>\source_share
\\<IP address of SMB destination server>\dest_share
7,142 scanned, 7,141 compared, 7,141 same, 0 different, 0 missing, 0
errors
Total Time : 1m2s
STATUS : PASSED
```

配置

- 。 `configure` 命令用于配置SMB系统并连接到运行PostgreSQL数据库的系统。

语法

```
xcp.exe configure
```

显示示例

```
C:\NetApp\XCP>xcp.exe configure

Please choose the menu you want to start:
1. Configure xcp.ini file
0. Quit
```

倾听

- 。 listen 命令读取XCP二进制文件并启动XCP服务。

语法

```
xcp.exe listen
```

显示示例

```
c:\NetApp\XCP>xcp.exe listen
* Serving Flask app "xcp_rest_smb_app" (lazy loading)
* Environment: production
  WARNING: This is a development server. Do not use it in a production
deployment. Use a production WSGI server instead.
* Debug mode: off
```

XCP用例

XCP NFS和SMB的用例

了解XCP与NetApp XCP不同的数据迁移用例。

["将数据从 7- 模式迁移到 ONTAP"](#)

["使用 ACL 将 CIFS 数据从源存储箱迁移到 ONTAP"](#)

XCP日志记录

设置logconfig选项

了解中的logconfig选项 `xcpLogConfig.json` XCP NFS和SMB的JSON配置文件。

以下示例显示了使用"logconfig"选项设置的JSON配置文件：

- 示例 *

```
{
  "level": "INFO",
  "maxBytes": "52428800",
  "name": "xcp.log"
}
```

- 使用此配置、您可以通过从中选择有效级别值来根据严重性筛选消息 `CRITICAL`，`ERROR`，`WARNING`，`INFO`，和 `Debug`。
- `maxBytes` 设置用于更改循环日志文件的文件大小。默认值为50 MB。如果将此值设置为0、则会停止轮换、并为所有日志创建一个文件。
- `name` 选项用于配置日志文件的名称。
- 如果缺少任何密钥值对、系统将使用默认值。如果在指定现有密钥的名称时出错、则会将其视为新密钥、新密钥不会影响系统的工作方式或系统功能。

设置eventlog选项

XCP支持事件消息、您可以使用启用此功能 `eventlog` 选项 `xcpLogConfig.json` JSON配置文件。

对于NFS、所有事件消息都会写入 `xcp_event.log` 文件 `/opt/NetApp/xFiles/xcp/` 或使用以下环境变量配置的自定义位置：

`XCP_CONFIG_DIR`



设置两个位置后、`XCP_LOG_DIR` 已使用。

对于SMB、所有事件消息都会写入文件 `xcp_event.log` 位于默认位置 `C:\NetApp\XCP\`。

用于**NFS**和**SMB**事件消息传送的**JSON**配置

在以下示例中、JSON配置文件可为NFS和SMB启用事件消息传送。

启用了eventlog选项的JSON配置文件示例

```
{
  "eventlog": {
    "isEnabled": true,
    "level": "INFO"
  },
  "sanitize": false
}
```

启用了事件日志和其他选项的JSON配置文件示例

```
{
  "logConfig": {
    "level": "INFO",
    "maxBytes": 52428800,
    "name": "xcp.log"
  },
  "eventlog": {
    "isEnabled": true,
    "level": "INFO"
  },
  "syslog": {
    "isEnabled": true,
    "level": "info",
    "serverIp": "10.101.101.10",
    "port": 514
  },
  "sanitize": false
}
```

下表显示了eventlog子选项及其问题描述：

子选项	JSON 数据类型	默认值	Description
isEnabled	布尔值	false	此布尔选项用于启用事件消息传送。如果设置为false、则不会生成任何事件消息、也不会将事件日志发布到事件日志文件中。
level	string	信息	事件消息严重性筛选级别。事件消息支持五个严重性级别、按严重性的降级顺序排列：严重、错误、警告、信息和调试

NFS事件日志消息的模板

下表显示了NFS事件日志消息的模板和示例：

模板	示例
<pre><Time stamp> - <Severity level> {"Event ID": <ID>, "Event Category":<category of xcp event log>, "Event Type": <type of event log>, "ExecutionId": < unique ID for each xcp command execution >, "Event Source": <host name>, "Description": <XCP event log message>}</pre>	<pre>2020-07-14 07:07:07,286 - ERROR {"Event ID": 51, "Event Category": "Application failure", "Event Type": "No space left on destination error", " ExecutionId ": 408252316712, "Event Source": "NETAPP-01", "Description": "Target volume is left with no free space while executing : copy {}. Please increase the size of target volume 10.101.101.101:/cat_vol"}</pre>

EventLog消息选项

以下选项可用于事件日志消息：

- Event ID：每个事件日志消息的唯一标识符。
- Event Category：说明事件类型和事件日志消息的类别。
- Event Type：这是描述事件消息的短字符串。多个事件类型可以属于一个类别。
- Description：“问题描述”字段包含由XCP生成的事件日志消息。
- ExecutionId：执行的每个XCP命令的唯一标识符。

启用系统日志客户端

XCP支持系统日志客户端向NFS和SMB的远程系统日志接收器发送XCP事件日志消息。它支持使用默认端口514的UDP协议。

为NFS和SMB配置系统日志客户端

要启用系统日志客户端、需要配置 `syslog` 选项 `xcpLogConfig.json` NFS和SMB的配置文件。

以下为NFS和SMB的系统日志客户端配置示例：

```
{
  "syslog":{
    "isEnabled":true,
    "level":"INFO",
    "serverIp":"10.101.101.d",
    "port":514
  },
  "sanitize":false
}
```

系统日志选项

下表显示了syslog子选项及其问题描述：

子选项	JSON 数据类型	默认值	Description
isEnabled	布尔值	false	此布尔选项可在XCP中启用系统日志客户端。将其设置为false将忽略系统日志配置。
level	string	信息	事件消息严重性筛选级别。事件消息支持五个严重性级别、按严重性的降级顺序排列：严重、错误、警告、信息和调试
serverIp	string	无	此选项可列出远程系统日志服务器的IP地址或主机名。
port	国际	514.	此选项是远程系统日志接收器端口。您可以使用此选项将系统日志接收器配置为在其他端口上接受系统日志数据报。默认UDP端口为514。



。sanitize 不应在"syslog"配置中指定选项。此选项具有全局范围、适用于JSON配置中的日志记录、事件日志和系统日志。将此值设置为"true "将隐藏发布到系统日志服务器的系统日志消息中的敏感信息。

系统日志消息格式

对于NFS和SMB、通过UDP发送到远程系统日志服务器的每个系统日志消息都会按照RFC 5424格式进行格式化。

下表显示了根据RFC 5424对XCP的系统日志消息支持的严重性级别：

严重性值	严重性级别
3.	错误：错误情况
4.	警告：警告条件
6.	Informational：信息性消息
7.	debug：调试级别的消息

在NFS和SMB的系统日志标头中、version的值为1、而XCP的所有消息的工具值均设置为1 (用户级消息)：

$\langle \text{PRI} \rangle = \text{syslog facility} * 8 + \text{severity value}$

具有NFS系统日志标头的XCP应用程序系统日志消息格式：

下表显示了NFS系统日志消息格式的模板和示例以及系统日志标头：

模板	示例
<pre><PRI><version> <Time stamp> <hostname> xcp_nfs - - - <XCP message></pre>	<pre><14>1 2020-07-08T06:30:34.341Z netapp xcp_nfs - - - INFO {"Event ID": 14, "Event Category": "XCP job status", "Event Type": "XCP scan completion", "Event Source": "netapp", "Description": "XCP scan is completed by scanning 8 items"}</pre>

对于**NFS、XCP**应用程序消息不带系统日志标头

下表显示了NFS不带系统日志标头的系统日志消息格式的模板和示例：

模板	示例
<pre><message severity level i.e CRITICAL, ERROR, WARNING, INFO, DEBUG> <XCP event log message></pre>	<pre>INFO {"Event ID": 14, "Event Category": "XCP job status", "Event Type": "XCP scan completion", "Event Source": "netapp", "Description": "XCP scan is completed by scanning 8 items"}</pre>

适用于**SMB**的**XCP**应用程序系统日志消息格式以及系统日志标头

下表显示了一个模板和一个包含SMB系统日志标头的系统日志消息格式示例：

模板	示例
<pre><PRI><version> <Time stamp> <hostname> xcp_smb - - - <XCP message></pre>	<pre><14>1 2020-07-10T10:37:18.452Z bansala01 xcp_smb - - - INFO {"Event ID": 14, "Event Category": "XCP job status", "Event Type": "XCP scan completion", "Event Source": "NETAPP- 01", "Description": "XCP scan is completed by scanning 17 items"}</pre>

SMB的**XCP**应用程序消息、不带系统日志标头

下表显示了SMB不带系统日志标头的系统日志消息格式的模板和示例：

模板	示例
<pre><message severity level i.e CRITICAL, ERROR, WARNING, INFO, DEBUG> <XCP event log message></pre>	<pre>NFO {"Event ID": 14, "Event Category": "XCP job status", "Event Type": "XCP scan completion", "Event Source": "NETAPP-01", "Description": "XCP scan is completed by scanning 17items"}</pre>

XCP事件日志

XCP NFS事件日志

查看XCP NFS的事件日志示例。

下表显示了XCP NFS的事件日志。

事件 ID	事件模板	事件示例
401	Mounted on NFS export <mount path> with maximum read block size <read block size> bytes, maximum write block size <write block size> bytes. Mount point has mode value<mode bits> and type: <fattr3 type>.	2020-07-14 03:53:59,811 - INFO {"Event ID":401, "Event Category": "Mounting unmounting file system", "Event Type": "Mount file system information", "ExecutionId": 408249379415, "Event Source": "NETAPP-01", "Description": "Mounted on NFS export <IPaddress of NFS server>:/test1 with maximum read block size 65536 bytes, maximum write block size 65536 bytes. Mount point has mode value 493 and type : Directory"}
181	This license is issued to <username>of <company name>,license type is <license type> with <license status> status, license will expire on <expire date>	2020-07-14 03:53:59,463 - INFO {"Event ID": 181, "Event Category": "Authentication and authorization", "Event Type": "License information", "ExecutionId": 408249379415, "Event Source": "NETAPP-01", "Description": "This license is issued to NetApp User of Network Appliance, Inc, license type is SANDBOX with ACTIVE status, license will expire on Thu Jul 1 00:00:00 2021"}

事件 ID	事件模板	事件示例
183	The license issued to <username> of <company name> will expire in less than one week	2020-07-14 04:02:55,151 - WARNING {"Event ID": 183, "Event Category": "Authentication and authorisation", "Event Type": "License warning", "ExecutionId": 408249519546, "Event Source": "NETAPP-01", "Description": "The license issued to NetApp User of Network Appliance, Inc will expire in less than one week"}
581	Catalog path <catalog volume path> to store catalog directory is not accessible. Refer user guide for configuring catalog volume.	2020-07-14 04:05:00,857 - ERROR {"Event ID": 581, "Event Category": "Catalog and indexing", "Event Type": "Catalog exporting error", "ExecutionId": 408249552351, "Event Source": "NETAPP-01", "Description": "Catalog path <IP address of NFS server>:/test11 to store catalog directory is not accessible. Refer user guide for configuring catalog volume."}
582	Failed creating catalog directory in catalog volume path <catalog volume path>	2020-07-14 04:10:12,895 - ERROR {"Event ID": 582, "Event Category": "Catalog and indexing", "Event Type": "Catalog directory creation error", "ExecutionId": 408249630498, "Event Source": "NETAPP-01", "Description": "Failed creating catalog directory in catalogvolume path 10.234.104.250:/cat_vol"}

事件 ID	事件模板	事件示例
584	Error in creating index directory <index id> for <command>	2020-07-14 04:52:15,918 - ERROR {"Event ID":584, "Event Category": "Catalog and indexing", "Event Type": "Error in index creation", "ExecutionId": 408250278214, "Event Source": "NETAPP-01", "Description": "Error in creating index directory abc7 for scan"}
586	Failed to create index <index id> in catalog volume while executing command : <command>	2020-07-14 04:45:46,275 - ERROR {"Event ID": 586, "Event Category": "Catalog and indexing", "Event Type": "Error in index creation", "ExecutionId": 408250177021, "Event Source": "NETAPP-01", "Description": "Failed to create index abc6 in catalog volume while executing command : scan {- newid: 'abc6'}"}
351	System resources available while executing xcp command: <command>, are : <CPU info>, <memory info>	2020-07-14 05:08:35,393 - INFO {"Event ID":351, "Event Category": "System resource utilization", "Event Type": "Resources available for scan", "ExecutionId": 408250529264, "Event Source": "NETAPP-01", "Description": "System resources available while executing xcp command : scan , are : CPU: count 4, load avg (1/5/15m) 0.0, 0.0, 0.0, System memory (GiB): avail 7.3, total 7.8, free 6.6, buffer 0.1, cache 0.5"}

事件 ID	事件模板	事件示例
13	XCP <command> is running on platform <platform info> for source <source info>	2020-07-14 05:08:35,478 - INFO {"Event ID": 13, "Event Category": "XCP job status", "Event Type": "Starting xcp scan operation", "ExecutionId": 408250529264, "Event Source": "NETAPP-01", "Description": "XCP command : scan {-newid: 'abc7'} is running on platform Linux-2.6.26-2-amd64-x86_64-with-debian- 5.0.10 for source 10.234.104.250:/test1"}
14	XCP scan completed successfully after scanning <scan item count> items. Source : <source scanned>	2020-07-14 05:08:35,653 - INFO {"Event ID": 14, "Event Category": "XCP job status", "Event Type": "XCP scan completion", "ExecutionId": 408250529264, "Event Source": "NETAPP-01", "Description": "XCP scan completed successfully after scanning 479 items. Source : 10.234.104.250:/test1"}
354	System resources available while executing xcp command: <command>, are : <CPU info>, <memory info>	2020-07-14 05:15:13,562 - INFO {"Event ID": 354, "Event Category": "System resource utilization", "Event Type": "Resources available for copy", "ExecutionId": 408250596708, "Event Source": "NETAPP-01", "Description": "System resources available while executing xcp command : copy , are : CPU: count 4, load avg (1/5/15m) 0.0, 0.0, 0.0, System memory (GiB): avail 7.3, total 7.8, free 6.6, buffer 0.1, cache 0.5"}

事件 ID	事件模板	事件示例
25.	XCP <command> is running on platform <platform info> for source <copy source> and destination <copy destination/target>	2020-07-14 05:15:13,647 - INFO {"Event ID": 25, "Event Category": "XCP job status", "Event Type": "Starting xcp copy operation", "ExecutionId": 408250596708, "Event Source": "NETAPP-01", "Description": "XCP command : copy {} is running on platform Linux-2.6.26- 2-amd64-x86 64-with-debian-5.0.10 for source <IP address of NFS server>:/source_vol and destination <NFS destination source>:/test1"}
26	XCP copy completed successfully after scanning <scanned item count> of which <matched item count> are matched and <copied item count> items are copied to the destination. Source : <copy source>, destination :<copy destination/target	2020-07-14 05:15:13,885 - INFO {"Event ID":26, "Event Category": "XCP job status", "Event Type": "XCP copy completion", "ExecutionId": 408250596708, "Event Source": "NETAPP-01", "Description": "XCP copy completed successfully after scanning 3 of which 0 are matched and 2 items are copied to the destination. Source : <IP address of NFS server>:/source_vol, destination : <NFS destination source>:/test1"}

事件 ID	事件模板	事件示例
16.	XCP <command> is running on platform <platform info> for source <sync source> and destination <sync destination>	2020-07-14 06:41:20,145 - INFO {"Event ID": 16, "Event Category": "XCP job status", "Event Type": "Starting xcp sync operation", "ExecutionId": 408251920146, "Event Source": "NETAPP-01", "Description": "XCP command : sync {-id: 'autoname_copy_2020-07-14_06.22.07.233271'} is running on platform Linux-2.6.26-2-amd64-x86_64-with-debian-5.0.10 for source <IP address of NFS server>:/src_vol and destination <NFS destination source>:/dest_vol"}
352	System resources available while executing xcp command: <command>, are : <CPU info>, <memory info>	2020-07-14 06:41:28,728 - INFO {"Event ID": 352, "Event Category": "System resource utilization", "Event Type": "Resource available for sync", "ExecutionId": 408251920146, "Event Source": "NETAPP-01", "Description": "System resources available while executing xcp command : sync {-id: 'autoname_copy_2020-07-14_06.22.07.233271'} , are : CPU: count 4, load avg (1/5/15m) 0.1, 0.0, 0.0, System memory (GiB): avail 7.2, total 7.8, free 6.6, buffer 0.1, cache 0.5"}

事件 ID	事件模板	事件示例
17	XCP sync is completed. Total scanned <scanned item count>, copied <copied item count>, modification <modification item count>, new file <new file count>, delete item <delete item count>. Command executed : <command>	2020-07-14 06:41:29,245 - INFO {"Event ID":17, "Event Category": "XCP job status", "Event Type": "XCP sync completion", "ExecutionId": 408251920146, "Event Source": "NETAPP-01", "Description": "XCP sync is completed. Total scanned 66, copied 0, modification 1, new file 0, delete item 0. Command executed : sync {-id: 'autoname_copy_2020-07-14_06.22.07.233271'}"}
19	XCP <command> is running on platform <platform info> for source <verify source> and destination <verify destination>	2020-07-14 06:54:59,084 - INFO {"Event ID": 19, "Event Category": "XCP job status", "Event Type": "Starting xcp verify operation", "ExecutionId": 408252130477, "Event Source": "NETAPP-01", "Description": "XCP command : verify {} is running on platform Linux-2.6.26-2-amd64-x86_64-with- debian-5.0.10 for source <IP address of NFS server>:/src_vol and destination <IP address of NFS destination server>:/dest_vol"}
353	System resources available while executing xcp command: <command>, are : <CPU info>, <memory info>	2020-07-14 06:54:59,085 - INFO {"Event ID": 353, "Event Category": "System resource utilization", "Event Type": "Resources available for verify", "ExecutionId": 408252130477, "Event Source": "NETAPP-01", "Description": "System resources available while executing xcp command : verify , are : CPU: count 4, load avg (1/5/15m) 0.0, 0.0, 0.0, System memory (GiB): avail 7.3, total 7.8, free 6.6, buffer 0.1, cache 0.5"}

事件 ID	事件模板	事件示例
211	log file path : <file path> , severity filter level <severity level>, log message sanitization is set as <sanitization value>	2020-07-14 06:40:59,104 - INFO { "Event ID": 211, "Event Category": "Logging and supportability", "Event Type": "XCP logging information", "ExecutionId": 408251920146, "Event Source": "NETAPP-01", "Description": "Log file path : /opt/NetApp/xFiles/xcp/xcplogs/ xcp.log, severity filter level INFO, log message sanitization is set as False" }
215	Event file path: <file path>, severity filter level <severity level>, event message sanitization is set as <sanitization value>	2020-07-14 06:40:59,105 - INFO { "Event ID": 215, "Event Category": "Logging and supportability", "Event Type": "XCP event information", "ExecutionId": 408251920146, "Event Source": "NETAPP-01", "Description": "Event file path :/opt/NetApp/xFiles/xcp/xcplogs /xcp_event.log, severity filter level INFO, event message sanitization is set as False" }
54	Catalog volume is left with no free space please increase the size of catalog volume <catalog volume running out of space>	2020-07-14 04:10:12,897 - ERROR { "Event ID": 54, "Event Category": "Application failure", "Event Type": "No space left on Catalog volume error", "ExecutionId": 408249630498, "Event Source": "NETAPP-01", "Description": "Catalog volume is left with no free space. Please increase the size of catalog volume<IP address of NFS destination server>:/cat_vol" }

事件 ID	事件模板	事件示例
53.	Catalog volume <catalog volume> is left with no free space to store index <index id> while executing <command>. Please increase the size of the catalog volume <catalog volume running out of space>	2020-07-14 04:52:15,922 - ERROR {"Event ID": 53, "Event Category": "Application failure", "Event Type": "No space left for catalog volume error", "ExecutionId": 408250278214, "Event Source": "NETAPP-01", "Description": "Catalog volume 10.234.104.250:/cat_vol is left with no free space to store index abc7 while executing : scan {-newid: 'abc7'}. Please increase the size of the catalog volume <IP address of NFS destination server>:/cat_vol"}
61.	NFS LIF <LIF IP> is not reachable for path <volume path without IP> while executing <command>. Please check volume is not offline and is reachable.	2020-07-14 07:38:20,100 - ERROR {"Event ID":61, "Event Category": "Application failure", "Event Type": "NFS mount has failed", "ExecutionId": 408252799101, "Event Source": "NETAPP-01", "Description": "NFS LIF <IP address of NFS destination server> is not reachable for path /test11 while executing : scan {}. Please check volume is not offline and is reachable"}
71	TCP connection could not be established for IP address <IP>. Check network setting and configuration.	2020-07-14 07:44:44,578 - ERROR {"Event ID": 71, "Event Category": "Application failure", "Event Type": "IP is not active", "ExecutionId": 408252889541, "Event Source": "NETAPP-01", "Description": "TCP connection could not be established to the address <IP address of NFS destination server>. Check network setting and configuration."} (UT done)

事件 ID	事件模板	事件示例
51	Target volume is left with no free space while executing: <command>. Please increase the size of target volume <volume running out of space>.	2020-07-14 07:07:07,286 - ERROR {"Event ID": 51, "Event Category": "Application failure", "Event Type": "No space left on destination error", "ExecutionId": 408252316712, "Event Source": "NETAPP-01", "Description": "Target volume is left with no free space while executing : copy {}. Please increase the size of target volume <IP address of NFS destination server>:/cat_vol"}
76	Index id {} is already present . Use new index id and rerun command : <command>	2020-07-14 09:18:41,441 - ERROR {"Event ID": 76, "Event Category": "Application failure", "Event Type": "Index ID problem", "ExecutionId": null, "Event Source": "NETAPP-01", "Description": "Index id asd is already present . Use new index id and rerun command: scan {-newid: 'asd'} "}
362	CPU usage has crossed <percentage CPU used>%	2020-06-16 00:17:28,294 - ERROR {"Event ID": 362, "Event Category": "System resource utilization", "Event Type": "resources available for xcp", "Event Source": "NETAPP- 01 ", "Description": "CPU Usage has crossed 90.07%"}
363	Memory Usage has crossed <percentage memory used>%	2020-06-16 00:17:28,300 - ERROR {"Event ID": 363, "Event Category": "System resource utilization", "Event Type": "resources available for xcp", "Event Source": "NETAPP- 01", "Description": "Memory Usage has crossed 95%"}

事件 ID	事件模板	事件示例
22.	XCP <command> is running on platform <platform information> for source <resume source> and destination <resume destination>	2020-07-14 06:24:26,768 - INFO {"Event ID": 22, "Event Category": "XCP job status", "Event Type": "Starting xcp resume operation", "ExecutionId": 408251663404, "Event Source": "NETAPP-01", "Description": "XCP command : resume {-id: 'autoname_copy_2020-07-14_06.22.07.233271'} is running on platform Linux-2.6.26-2-amd64- x86_64-with-debian-5.0.10 for source <IP address for NFS sever>:/src_vol and destination <IP address of NFS destination server>:/dest_vol"}
356	System resources available while executing xcp command: <command> , are : <CPU info>, <memory information>	2020-07-14 06:24:26,837 - INFO {"Event ID": 356, "Event Category": "System resource utilization", "Event Type": "Resource available for resume", "ExecutionId": 408251663404, "Event Source": "NETAPP-01", "Description": "System resources available while executing xcp command : resume {-id: 'autoname_copy_2020-07-14_06.22.07.233271'} , are : CPU: count 4, load avg (1/5/15m) 0.1, 0.1, 0.0, System memory (GiB): avail 7.2,total 7.8, free 6.6, buffer 0.1, cache 0.5"}

事件 ID	事件模板	事件示例
23	XCP resume is completed. Total scanned items <scanned item count>, total copied items <copied item count>. Command executed :<command>	2020-07-14 06:26:15,608 - INFO {"Event ID": 23, "Event Category": "XCP job status", "Event Type": "XCP resume completion", "ExecutionId": 408251663404, "Event Source": "NETAPP-01", "Description": "XCP resume is completed. Total scanned items 5982, total copied items 5973. Command executed : resume {-id: 'autoname_copy_2020-07-14_06.22.07.233271'} "}
76	Index id <index id> is already present. Use new index id and rerun command : <command>	2020-07-14 09:43:08,381 - ERROR {"Event ID": 76, "Event Category": "Application failure", "Event Type": "Index ID problem", "ExecutionId": null, "Event Source": "NETAPP-01", "Description": "Index id asd is already present . Use new index id and rerun command : scan {-newid: 'asd'} "}
82	Index id <index id> used while executing sync is incomplete. Try resume on the existing index id <index id>	2020-07-14 10:33:09,307 - ERROR {"Event ID": 82, "Event Category": "Application failure", "Event Type": "Incomplete index used for sync", "ExecutionId": null, "Event Source": "NETAPP-01", "Description": "Index id autoname_copy_2020-07-14_10.28.22.323897 used while executing sync is incomplete. Try resume on the existing index id autoname_copy_2020-07-14_10.28.22.323897."}

事件 ID	事件模板	事件示例
365	CPU utilization reduced to <CPU percentage used>%	2020-07-14 09:43:08 381 - ERROR {"Event ID": 364, "Event Category": "System resource utilization", "Event Type": "Resources available for xcp", "ExecutionId": 408251663404, "Event Source": "NETAPP-01", "Description": " CPU utilization reduced to 26%}
364	Memory utilization reduced to <CPU percentage used>%	2020-07-14 09:43:08,381 - INFO {"Event ID": 364, "Event Category": " Resources available for xcp", "Event Type": "Resources available for xcp", "ExecutionId": 408351663478, "Event Source": "NETAPP-01", "Description": " Memory utilization reduced to 16.2%"}
10	XCP command <command> has failed	2020-07-14 09:43:08,381 - INFO {"Event ID": 10, "Event Category": " Xcp job status", "Event Type": "XCP command failure", "ExecutionId":4082516634506, "Event Source": "NETAPP-01", "Description": " XCP command verify has failed"

XCP SMB事件日志

查看XCP SMB的事件日志示例。

下表显示了XCP SMB的事件日志。

事件 ID	事件模板	事件示例
355	CPU usage has crossed <CPU percentage use>%	2020-06-23 12:42:02,705 - INFO {"Event ID": 355, "Event Category": "System resource utilization", "Event Type": "CPU usage for xcp", "Event Source": "NETAPP-01", "Description": "CPU usage has crossed 96%"}

事件 ID	事件模板	事件示例
356	Memory usage has crossed <memory percentage use>%	2020-06-23 12:42:02,705 - INFO { "Event ID": 356, "Event Category": "System resource utilization", "Event Type": "Memory usage for xcp", "Event Source": "NETAPP-01", "Description": "CPU usage has crossed92.5%" }
61.	Address was not found: <complete address over which command is fired>	2020-07-15 02:57:06,466 - ERROR { "Event ID": 61, "Event Category": "Application Failure", "Event Type": "Address was not found", "ExecutionId": 408264113696, "Event Source": "NETAPP-01", "Description": "Address was not found: '\\\\<IP address of SMB server>\\cifs1\""} }
62.	Interface cannot be found: < complete address over which command is fired >	2020-07-15 02:52:00,603 - ERROR { "Event ID": 62, "Event Category": "Application Failure", "Event Type": "Interface was not found", "ExecutionId": 408264071616, "Event Source": "NETAPP-01", "Description": "Interface cannot be found: '\\\\<IP address of SMB server>\\cifs11\""} }
63.	Invalid Address. Pleased make sure that the Address starts with '\\'	2020-07-15 03:00:10,422 - ERROR { "Event ID": 63, "Event Category": "Application Failure", "Event Type": "Invalid Address", "ExecutionId": 408264197308, "Event Source": "NETAPP-01", "Description": "Invalid Address. Please make sure that the Address starts with '\\'" }

事件 ID	事件模板	事件示例
41.	Destination volume is left with no free space please increase the size target volume:<destination volume>	2020-06-15 17:12:46,413 - ERROR { "Event ID": 41, "Event Category": "Application Failure", "Event Type": "No space left on destination error", "Event Source": "NETAPP-01", "Description": "Destination volume is left with no free space please increase the size of target volume: <IP address of SMB server>\\to" }
211	Log file path : <file path>, severity filter level <severity level>, log message sanitization is set as <value of sanitization option>	{ "Event ID": 211, "Event Category": "Logging and supportability", "Event Type": "XCP logging information", "ExecutionId": 408252673852, "Event Source": "NETAPP-01", "Description": "Log file path : C:\\NetApp\\XCP\\Logs\\xcp.log, severity filter level DEBUG, log message sanitization is set as False" }
215	Event file path : <file path>, severity filter level <severity level>, Event message sanitization is set as <sanitization option>	{ "Event ID": 215, "Event Category": "Logging and supportability", "Event Type": "XCP event information", "ExecutionId": 408252673852, "Event Source": "NETAPP-01", "Description": "Event file path : C:\\NetApp\\XCP\\Logs\\xcp_event.log, severity filter level INFO, Event message sanitization is set as False" }

事件 ID	事件模板	事件示例
181	This license is issued to <user name> of <company name>, license type is <license type> with <status> status, license will expire expires on <expiration date>	{"Event ID": 181, "Event Category": "Authentication and authorization", "Event Type": "license information", "ExecutionId": 408252673852, "Event Source": "NETAPP-01", "Description": "This license is issued to calin of NetApp Inc, license type is SANDBOX with ACTIVE status, license will expire on Mon Dec 31 00:00:00 2029"}
13	XCP <command> is running on platform <platform information> for source <scan source>	2020-07-15 02:12:56,917 - INFO {"Event ID": 13, "Event Category": "XCP job status", "Event Type": "Starting xcp scan operation", "ExecutionId": 408263470688, "Event Source": "NETAPP-01", "Description": "XCP {scan} is running on platform Windows- 8.1-6.3.9600-SP0 for source \\\\ <ip address="" of="" server="" smb="">\cifs"}</ip>
351	System resources available while command : <command>, are : cpu <CPU information>, total memory <total memory on system>, available memory	2020-07-15 02:12:56,917 - INFO {"Event ID": 351, "Event Category": "System resource utilization", "Event Type": "Resources available for scan", "ExecutionId": 408263470688, "Event Source": "NETAPP-01", "Description": "System resources available while executing xcp command : scan, are : cpu 4, total memory 8.00GiB, available memory 6.81GiB"}

事件 ID	事件模板	事件示例
14	XCP scan completed successfully after scanning <scanned items count> items. Source :<scan source>	2020-07-15 02:12:57,932 - INFO {"Event ID": 14, "Event Category": "XCP job status", "Event Type": "XCP scan completion", "ExecutionId": 408263470688, "Event Source": "NETAPP-01", "Description": "XCP scan completed successfully after scanning 29 items. Source : \\ \\ \\ <IP address of SMB server> \\ \cifs"}
25.	XCP <command> is running on platform <platform information> for source <copy source> and destination <copy destination>	2020-07-15 02:19:06,562 - INFO {"Event ID": 25, "Event Category": "XCP job status", "Event Type": "Starting xcp copy operation", "ExecutionId": 408263563552, "Event Source": "NETAPP-01", "Description": "XCP {copy} is running on platform Windows- 8.1-6.3.9600-SP0 for source \\ \\ \\ <IP address of SMB server> \\ \cifs and destination \\ \\ \\ <IP address of SMB destination server> \\ \source_vol"}
352	System resources available while executing command :<command>, are : cpu <CPU information>, total memory <Total memory>, available memory <memory available for execution>	2020-07-15 02:19:06,562 - INFO {"Event ID": 352, "Event Category": "System resource utilization", "Event Type": "Resources available for copy", "ExecutionId": 408263563552, "Event Source": "NETAPP-01", "Description": "System resources available while executing xcp command : copy, are : cpu 4, total memory 8.00GiB, available memory 6.82GiB"}

事件 ID	事件模板	事件示例
26	XCP copy completed successfully after copying <copied items count> items. Source :<copy source>, destination : <copy destination>	2020-07-15 02:19:14,500 - INFO {"Event ID": 26, "Event Category": "XCP job status", "Event Type": "XCP copy completion", "ExecutionId": 408263563552, "Event Source": "NETAPP-01", "Description": "XCP copy completed successfully after copying 0 items. Source :
16.	XCP <command> is running on platform <platform> for source <sync source> and destination <sync destination>	2020-07-15 02:27:10,490 - INFO {"Event ID": 16, "Event Category": "XCP job status", "Event Type": "Starting xcp sync operation", "ExecutionId": 408263688308, "Event Source": "NETAPP-01", "Description": "XCP {sync} is running on platform Windows- 8.1-6.3.9600-SP0 for source \\\\ <ip \\\\<ip="" address="" and="" destination="" of="" server>\\cifs="" server>\\source_vol"}<="" smb="" td=""> </ip>
353	System resources available while executing xcp command: <command>, are : cpu <CPU information>, total memory <total memory>, available memory <available memory>	2020-07-15 02:27:10,490 - INFO {"Event ID": 353, "Event Category": "System resource utilization", "Event Type": "Resources available for sync", "ExecutionId": 408263688308, "Event Source": "NETAPP-01", "Description": "System resources available while executing xcp command : sync, are : cpu 4, total memory 8.00GiB, available memory 6.83GiB"}

事件 ID	事件模板	事件示例
17	XCP sync completed successfully after scanning <scanned item count> items, copying <copied item count> items, comparing <compared item count> items, removing <removed item count> items. Source : <sync source>, destination : <sync destination>	2020-07-15 03:04:14,269 - INFO {"Event ID": 17, "Event Category": "XCP job status", "Event Type": "XCP sync completion", "ExecutionId": 408264256392, "Event Source": "NETAPP-01", "Description": "XCP sync completed successfully after scanning30 items, copying 20 items, comparing 30 items, removing 0 items. Source : \\ \\ \\ <IP address of SMB server> \\ \cifs, destination : \\ \\ \\ <IP address of SMB destination server> \\ \source_vol"}
19	XCP <command> is running on platform <platform information> for source <verify source> and destination <verify destination>	2020-07-15 03:14:04,854 - INFO {"Event ID": 19, "Event Category": "XCP job status", "Event Type": "Starting xcp verify operation", "ExecutionId": 408264409944, "Event Source": "NETAPP-01", "Description": "XCP {verify -noacl} is running on platform Windows-8.1-6.3.9600-SP0 for source \\ \\ \\ <IP address of SMB server> \\ \cifs and destination \\ \\ \\ <IP address of SMB destination server> \\ \source_vol"}
354	System resources available for command : <command>, are : cpu <CPU information>, total memory <total memory>, available memory <available memory for execution>	2020-07-15 03:14:04,854 - INFO {"Event ID": 354, "Event Category": "System resource utilization", "Event Type": "Resources available for verify", "ExecutionId": 408264409944, "Event Source": "NETAPP-01", "Description": "System resources available while executing xcp command : verify, are : cpu 4, total memory 8.00GiB, available memory 6.80GiB"}

事件 ID	事件模板	事件示例
20	XCP verify is completed by scanning <scanned item count> items, comparing <compared item count> items	{"Event ID": 20, "Event Category": "XCP job status", "Event Type": "XCP verify completion", "command Id": 408227440800, "Event Source": "NETAPP-01", "Description": "XCP verify is completed by scanning 59 items, comparing 0 items"}
357	CPU utilization reduced to <CPU utilization percentage>%	{"Event ID": 357, "Event Category": "System resource utilization", "Event Type": "CPU usage for xcp", "Event Source": "NETAPP- 01", "Description": "CPU utilization reduced to 8.2%"}
358	Memory utilization reduced to <memory utilization percentage>%	{"Event ID": 358, "Event Category": "System resource utilization", "Event Type": "Memory usage for xcp", "Event Source": "NETAPP-01", "Description": "Memory utilization reduced to 19%"}
10	XCP command <command> has failed	2020-07-14 09:43:08,381 - INFO {"Event ID": 10, "Event Category": " Xcp job status", "Event Type": "XCP command failure", "Event Source": "NETAPP-01", "Description": " XCP command H:\\console_msg\\xcp_cifs\\xcp\\ main .py verify \\\\<IP address of SMB server>\\cifs \\\<IP address of SMB destination server>\\source_vol has failed"

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