Xterity Backup Services:
Premier Backup-as-a-Service (P-BaaS)
Essential Backup-as-a-Service (E-BaaS)

The intended audience for this document includes all Xterity channel partners, including but not limited to businesses typically referred to as:

- Managed Service Providers
- Technology / Service Resellers
- Technology / Service Distributors

All the business types mentioned above are referred to as "partner" or "partners." The end users, consumers, or beneficiaries of a service originating from Xterity are referred to as "client(s)" or "partner's client(s)."

The term "server" is meant to encompass any number of servers. The use of "server" implies one or more servers.

The term "desktop" is meant to encompass any number of traditional end user personal computer devices such as desktops, towers, and laptops.

Mobile devices (e.g. smartphones, tablets etc.) are not currently supported with the services referenced in this document.

To meet the needs of businesses requiring data backup services the following Xterity BaaS services are available:

- Premier Backup as a Service (**P-BaaS**) - Servers only
- Essential Backup as a Service (**E-BaaS**) - Servers, laptops, workstations

The terms On Cloud and Off Cloud are used to represent the scenarios described and depicted below.

- **ON Cloud:** Services that are operational within, and between Xterity cloud platforms. Both the source and recovery resources reside within Xterity clouds.

- **OFF Cloud (Hybrid):** Services that are operational between an Xterity cloud platform, and any other infrastructure platform. The source resource is not located within an Xterity cloud but the recovery (target) resource is.
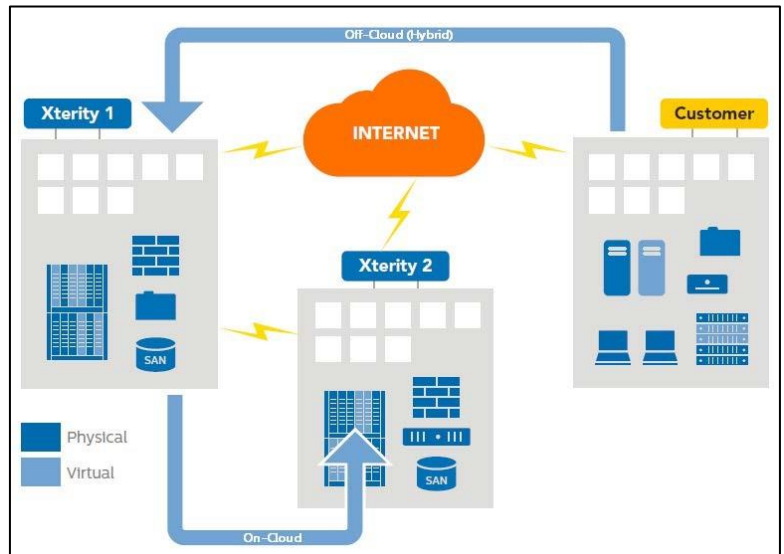
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Xterity Backup as a Service (BaaS) Service Offerings

Premier BaaS (P-BaaS) and Essential BaaS (E-BaaS):

High level comparison:

The main difference between the BaaS offerings is the level of support/management provided by Xterity Cloud Operations. The BaaS service offerings are categorized as Premier and Essential. For servers, there are both Premier and Essential BaaS services. Desktops and laptops are supported with the Essential BaaS service. The term "desktops" as used in the remainder of this document is intended to include desktop and laptop end user devices. At this time, mobile (e.g. smartphones, tablets etc.) devices are not supported with the BaaS services.

Services →	Premier BaaS (P-BaaS) Server backup	Essential BaaS (E-BaaS) Server / Desktop backup
Source device type	Server	Desktop / Laptop & Server
Installation	Agent based install done with Xterity support	Agent based install can be done self service
Source device: Location options	On Xterity Cloud Off Cloud (customer site)	On Xterity Cloud Off Cloud (customer site)
Recovery data: location options	Xterity Cloud storage & Customer vAPP (required)	Xterity Cloud storage Customer Storage (optional)
Recovery device: location options	On Xterity Cloud Off Cloud (customer site)	On Xterity Cloud Off Cloud (customer site)

P-BaaS for Servers:

Description:

Xterity P-BaaS is a block storage/disk volume/LUN based intelligent backup service for servers that provides automated replication of storage devices in the Xterity datacenter(s). Utilizing host based software provided by Xterity, partners/clients can specify restore points by time, day, date, month and yearly. Retention times can be specified for each restore point. The Xterity P-BaaS service is a constant data protection (CDP) service providing full backup of identified storage devices for each restore point specified. Since the service is a CDP service, changes are constantly and automatically processed, enabling the P-BaaS service to provide a full restore point that is no older than 24 hours at any time. This means that partners/clients do not need to access multiple restore points to perform a restore of any specific restore point since the restore points are full backups and do not depend on any other restore point for completeness.

Retention periods can be specified as "retention windows" where retention can be defined as simply as specifying retention of restore points for the last 7 days or the last 12 months, and the P-BaaS service will retain all restore points specified for the duration of the "retention window." Xterity P-BaaS will automatically delete any restore points that do not meet the retention rule helping partners/clients to optimize their protection service and minimize costs. And while the Xterity P-BaaS service provides a simple to use, flexible configuration of automated backup schemes, partners/clients can create a restore point manually anytime they wish.

Location of the backup data is also selectable from the list of Xterity datacenters worldwide. Charges are based on the total average monthly volume/capacity in Gigabytes of restore points/snapshots. Restore points/snapshots capture all data contained in the block volume/disk/LUN. During restoration, partners/clients can select file level, partition level or full server level data from the restore point/snapshot for the restoration to meet their needs. OFF Cloud P-BaaS offers the choice to create local/On-Premise repositories for the backup datastores in addition to the standard Cloud repositories. Restoring from local/On-Premise backup datastores can significantly reduce restore time. Egenera does not charge for storage consumed by local/On-Premise (e.g. non-cloud storage) datastores.

Xterity P-BaaS can be used for backup of servers located in a private, "On-Premise" datacenter (Off Cloud) or for partners/clients with computing solutions already in an Xterity datacenter (backups between Xterity datacenters-aka On Cloud). P-BaaS includes 24x7 support using the Xterity support ticketing system or phone support.

For OFF Cloud, once the partner/client configures the backup regimen they want, using the simple intuitive user interface, Xterity provides assurance that the specified backup regimen is operational with 24x7 verification that restore point schedules are met, and that data replication is successful. Once their data is protected in the Xterity Cloud, partners/clients have self-service access to backup data.

For ON Cloud, once the partner/client specific backup regimen is configured by Xterity cloud operations personnel, Xterity, provides assurance that the specified backup regimen is operational with 24x7 verification that restore point schedules are met and that data replication is successful. Once their data is protected in the Xterity Cloud, partners/clients can perform restoration of file level or partition level restore points. For full server restoration, partners/clients request full server restore points using the POV support system or phone support. Xterity cloud operations personnel will perform the restoration as soon as commercially possible.

The P-BaaS for OFF Cloud (On-Premise to Xterity) requires deployment of a vAPP on premise. The vAPP is compatible with VMware vSphere, Microsoft Hyper-V and XenServer hypervisors. On-premise resources required to setup the backup service include local storage capacity equivalent to 120% of the protected storage capacity, allocation of a dedicated public IP address for connectivity and specific firewall configurations for security.

Xterity datacenters use the latest networking technology and software with redundant 10Gb network technology within the Xterity Cloud. Xterity datacenters offer options for connecting On-Premise datacenters to the Xterity datacenters that allow customers to choose the price, performance, throughput and security (e.g. VPN) for the Xterity to "On-Premise" network connections to meet their business requirements.

Frequently Asked Questions:

- **Q: How long does the initial data synchronization (seeding) process take to complete?**

o The amount of time required for initial synchronization is dependent on the amount of data to be synchronized, network bandwidth, and network utilization.

o To avoid potentially long initial synchronization times, the (optional) Xterity Dock Service provides a secure, efficient solution. For a one-time charge, the storage dock service allows for copying the seed data to a local media device (e.g. USB, HDD), and sending the device to Xterity cloud operations where it is loaded into Xterity cloud storage.

- **Q: How much storage capacity will the restore point/snapshot consume?**
    o The amount of storage consumed by the server restore points/snapshots is dependent on:

    a) the size of the servers' storage volume that is targeted for backup
    b) the retention time of each restore point/snapshot
    c) the frequency that restore points/snapshots are created
    d) the change profile of the of the server storage volume to be targeted for backup

For **guidelines** on how to categorize your servers by change profile, use the information shown below. The information shown below is for reference purposes only and is not to be misconstrued as a guarantee of sizing accuracy. Your experience and results may vary.

Low Change profile is a **guideline** for servers you know have minimal new or updated data like file servers hosting archives, time management systems where data is seldom updated or added but frequently read. **High Change** profile is a **guideline** for servers you know change significantly during the day. Email servers, transactional databases, and servers with collaboration software fall into this category. **Average Change** profile is a **guideline** to use for servers that do not fall in either of the other two categories.

Backup Storage Capacity Estimator:

Scenario	Snapshot creation schedule and retention timeframe - example scenarios	Monthly Storage Consumption for BaaS on **Low Change** Server	Monthly Storage Consumption for BaaS on **Average Change** Server	Monthly Storage Consumption for BaaS on **High Change** Server
# 1	One snapshot scheduled for every hour with one-hour retention and one snapshot daily retained for 5 days	120.3% of total storage capacity	168% of total storage capacity	213% of total storage capacity
# 2	One snapshot scheduled for every hour with one-hour retention and one snapshot daily retained for 7 days	120.45% of total storage capacity	188% of total storage capacity	251% of total storage capacity
# 3	One snapshot weekly that is retained for 1 month	122% of total storage capacity	178% of total storage capacity	237% of total storage capacity
# 4	One snapshot per month retained for 3 months	124% of total storage capacity	203% of total storage capacity	266% of total storage capacity
# 5	One snapshot per month retained for 12 months	132% of total storage capacity	270% of total storage capacity	294% of total storage capacity
# 6	One snapshot per year retained for 3 years	126% of total storage capacity	170% of total storage capacity	230% of total storage capacity
# 7	One snapshot scheduled for every hour with one-hour retention and one snapshot daily retained for 5 days, and one snapshot per month retained for 12 months	177.3 % of total storage capacity	363% of total storage capacity	427% of total storage capacity
# 8	One snapshot scheduled for every hour with one-hour retention and one snapshot daily retained for 7 days and one snapshot per month retained for 12 months	177.45% of total storage capacity	383% of total storage capacity	465% of total storage capacity
Scenarios cannot be combined to create estimates.				

Example Calculation for Backup Storage Estimation

Acme Inc. needs to have hourly snapshots to protect for daily business operations and a daily snapshot retained for 5 days to be used by the marketing group and also needs to retain monthly snapshots for a year to meet accounting requirements.

This would be Scenario #7. Assume the server storage targeted for backup is 2 Terabytes and it includes an Exchange server and the transaction database for orders, the server change profile would be "High Change." The estimation for the amount of backup storage consumed by Acme Inc. is:

- **(2 Terabytes x 427%) = 8.54 Terabytes for Backup per month**

Tasks and Responsibilities:

P-BaaS Task	Responsibility
Maintain access by partner to the download for DiskSafe agent	Xterity
Maintain instructions for installing the DiskSafe agent at the client's datacenter.	Xterity
Setup network connectivity between On-Premise resources and the Xterity Datacenter	Xterity & Partner
Download / install and configure vAPP for OFF Cloud configurations	Partner
Download/install and configure DiskSafe agent on each server (Physical or virtual).	Partner
Notify POV Xterity that DiskSafe is installed via the POV ticket system.	Partner
Verify communications between DiskSafe Agents at Client datacenter and Xterity.	Xterity
Perform and Verify a successful initial synchronization of identified data for backup.	Xterity
Notify partner via POV Ticket that initial synchronization is complete and the server is now protected. This is done on a per server basis, not multiple servers.	Xterity
ON Cloud BaaS Client decides that an entire server requires restoration. The reseller notifies Xterity using POV ticket. Xterity opens DiskSafe and verifies all disks related to the server are protected. Xterity then performs the server restore and notifies reseller using POV when server is available for use.	Xterity
P-BaaS Task	Responsibility
OFF Cloud BaaS Client decides that an entire server requires restoration. The client or partner opens DiskSafe and verifies all disks related to the server are protected. Client/partner then performs the server restore according to instructions available on the Xterity knowledgebase website.	Partner/Client
Client decides to perform a file/partition restore. The client or reseller opens the DiskSafe agent and selects the restore point from the available restore points, as defined by the backup configuration, that contains the file and proceeds to "mount" the restore point as a disk, explore the file system showing all available restore points, then copy the file to a local (OnPremise for OFF Cloud, Xterity storage for ON Cloud) storage device. For OFF Cloud only, if Local/On-Premise repositories for backup datastores are available, then these can be used to locate the restore point to restore from.	Partner/Client
Monitor ongoing communications with DiskSafe, success of data replication and compliance with the backup schedules contained in DiskSafe configuration—notify reseller of any anomalies via POV Ticket.	Xterity

Service Level Agreement:

1) Xterity P-BaaS for Servers guarantees that a restore point/snapshot no older than 24 hours is available for restoration at any time during the duration of the service regardless of partners/clients actual restore point frequency or retention configuration.

2) Xterity assures that a data restore point/snapshot of the partner/client specified data is created and stored as an archive in the Xterity cloud for future use according to the partner/client specified schedule. For OFF Cloud p-BaaS solutions only, if local/On-Premise repositories are utilized, Xterity assures restore point/snapshot copies located On-Premise are created and stored as an archive for future use according to the partner/client specified schedule.

3) Xterity P-BaaS for Servers assures that the partner/client specified data restore point(s)/snapshot(s) is retained and accessible for use by the partner/client during the entire duration of the specified retention period. Data restore point(s)/snapshot(s) will be deleted once the specified retention period for the specific data restore point(s)/snapshot(s) has ended.

4) Xterity P-BaaS for Servers data restore point(s)/snapshot(s) are stored as digital storage volumes on hard disk drive (HDD) storage devices and are network accessible. No other transport or media type (tape, thumb drive etc.) format of the archived data restore point is offered as part of the P-BaaS for Servers service level agreement.

5) For Xterity P-BaaS for Servers - OFF Cloud, Xterity assures that the partner/client has network access to all archived restore point(s)/snapshot(s) (files, partitions, server images) for the purpose of the partner/client performing a restoration from identified data restore point(s)/snapshot(s). Xterity will notify the partner/client if the archived restore point(s)/snapshot(s) are not available to be accessed by the partner/client.

6) For Xterity Premium BaaS for Server - ON Cloud, Xterity assures that the partner/client has network access to all archived file or partition data that is part of a restore point(s)/snapshot(s) for the purpose of the partner/client performing a restoration from identified data restore point(s)/snapshot(s). Xterity will notify the partner/client if the archived restore point(s)/snapshot(s) file or partition data are not available for access by the partner/client.

7) For Xterity Premium BaaS for Server - ON Cloud, Xterity assures that restoration of a server(s) will be performed by Xterity as soon as commercially possible but not longer than four (4) hours after receiving a request from partner/client. If the restoration of a server is longer than four (4) hours, the partner/client will be eligible for credits per the Time to Repair (TTR) scheme for credits of the IaaS services—1 day to 5 days per month depending on length of time without services.

E-BaaS for Desktops and Servers:

Description:

The Xterity E-BaaS service is an easy to use file based (compressed & deduped) backup service that provides automated backup of data from "On Premise" devices like servers and desktops to be stored offsite in an Xterity Cloud datacenter. Utilizing a simple (downloadable) host based agent, customers can easily customize backup schedules and retention plans. E-BaaS is a traditional backup process providing automated backup copies of data (down to the folder level) but that are stored in the Xterity Cloud for secure, off-site protection. E-BaaS's simplicity provides a solution for partners to offer a high value service for customers who can benefit from a reliable aggressive backup solution. On average, E-BaaS can be ordered, provisioned, setup, and backing up data in less than an hour.

For remote business offices, branch offices and even "work from home" situations where IT resources and support staff are limited, E-BaaS provides a simple easy to use solution that doesn't require any local resources or IT skills. An agent is downloaded and then wizards provide deployment guidance. An agent is deployed on each operating system to be protected. Specific folders (or whole system) are then selected for inclusion in a backup plan. That's it! The backup process is initiated.

E-BaaS automatically routes the backup data directly to an Xterity Cloud datacenter using a selectable AES (AES 128, AES 192 or AES 256) encryption method. Backups can be scheduled to trigger at any time or they can be manually launched. The backup service runs in the background and generates minimal overhead. The backup process can be set to run at low, normal or high (operating system) priority.

Retention rules can be set to define how long backups should be kept. Backup retention settings can be set by the age of the backup or the number of backups to keep. A retention policy of indefinite is also available. There are no charges for copies of backup files stored on a local storage device. Clients have independent access to backup files and can access the files anytime. To ensure security and minimize monthly charges, E-BaaS automatically removes/deletes files in the Xterity Cloud datacenter after the retention period.

An internet connection is required. The capacity of the On Premise (source location) internet connection can dictate the amount of time required to complete a backup and to restore files to the source system. Internet connections with a **minimum of 5Mbps** are recommended. Initial upload for protected data can require many hours, for example a 100GB file using a 5Mbps internet connection could require up to 2 days. To avoid long (initial seeding) backup datastore upload times E-BaaS supports the Xterity Storage Dock service. For a one-time charge, the storage dock service allows for copying the initial backup data to a local media device (USB, Hard

Disk), and transporting the device to Xterity cloud operations where it is loaded and saved. Once the initial seed data is uploaded the ongoing backup updates in the Xterity Cloud require much less time. For example, 100GB of protected data requires less than 5 hours for the daily update with a 5Mbps network connection.

However, downloads of backup data for restoring files On Premise are impacted the same way as the uploads. Network connection speeds affect how quickly a restore from the Xterity Cloud can occur. As the previously mentioned example states, a 100GB file using a 5Mbps network connection may take 2 days to complete, whereas a 20Mbps network connection could accomplish the 100GB download in 12 hours. There are no charges on the Xterity Cloud network resources which provides a 100Mbps connection for uploads and downloads as part of the E-BaaS service. On Premise network connectivity, performance and resource availability are the responsibility of the partner or client.

E-BaaS provides the capability to back up the most popular Microsoft, Apple, and Linux operating systems. Support is also provided to simplify backup of select database and business applications. A list of supported operating systems, databases and applications can be found in the Essentials Backup User Guide located on the backup portal.

Supported operating systems and environments: •
  Microsoft:
- o   Windows
- o   SQL, Exchange, SharePoint and Active Directory o Office 365
- •   Agent for Linux
- •   Agent for Mac

*Not all versions of the software products mentioned above are supported. For the current support matrix please refer to the latest Essentials Backup Users Guide found on the backup portal or consult your Egenera representative.

The E-BaaS service is charged based on actual capacity utilized by the backup files stored in the Xterity Cloud datacenter. Backup files are stored as de-duped and compressed files to minimize file sizes, helping to reduce costs. Expected monthly backup storage capacity usage resulting from the 30-day rolling retention policy, the impact of deduplication and economies from compression is 1.8 times the capacity (Gigabytes) of protected files for servers and 1.2 times the capacity (Gigabytes) of protected files for desktops. There are no charges for copies of backup files optionally stored on local storage devices.

The E-BaaS service provides access to reports with capacity usage data and backup status.

Frequently Asked Questions:
- •   **Q: How long does the initial data synchronization (seeding) process take to complete?**
  - o   The amount of time required for initial synchronization is dependent on the amount of data to be synchronized, and network bandwidth.

  - o   To avoid potentially long initial synchronization times, the (optional) Xterity Dock Service provides a secure, efficient solution. For a one-time charge, the storage dock service allows for copying the seed data to a local media device (e.g. USB, HDD), and sending the device to Xterity cloud operations where it is loaded into Xterity cloud storage. •
    Q: What happens if an E-BaaS Server or Desktop is not available when the scheduled backup window occurs?
  - o   If the source device is not available, the scheduled backup will not occur. The device will be backed up at the next backup window if the device is available.

  - o   If a backup widow is missed the backup process can be manually launched at any time

- •   **Q: My client has some systems that should never be backed up during regular business hours. Can the backup start time be changed on a "per device" basis?**
  - o   Yes, backup plans can be established on a per system basis.

o The responsibility of monitoring E-BaaS backup success does not change. With E-BaaS, backup completion status monitoring is the responsibility of the partner.

Tasks and Responsibilities:

The E-BaaS service is intuitive and simple to use. The Users Guide (available on the backup portal) provides easy to follow instructions. With E-BaaS, partners perform all order, provisioning and configuration processes on behalf of their customers. Xterity Cloud Services operations is available 24x7x365 to assist if any issues are encountered.

Service Level Agreement:

1) Xterity E-BaaS requires users to adhere to Xterity Cloud specified configurations, settings and defaults for as defined in E-BaaS documentation.

2) Xterity assures an availability of 99.99% for access to daily restore point/snapshot of the partner/client specified data stored as an archive in the Xterity Cloud for download to the partner/client On Premise location.

3) Xterity E-BaaS data restore point(s)/snapshot(s) are stored as digital storage volumes on hard disk drive (HDD) storage devices and are accessible through network access. No other transport or media type (tape, thumb drive etc.) format of the archived data restore point is offered as part of the E-BaaS service level agreement.

Definitions

1) **End User Device:** Personal computing devices including workstations, towers, and laptops. Does not include mobile (smartphones, tablets).

2) **Private Networks:** Network connections between Xterity Cloud External Network Interfaces and any other compute infrastructure whose network capacity, security, performance, features, supplier and maintenance are designated and purchased by the partner or partner's client(s). These networks are not part of the Xterity Cloud infrastructure.

3) **Server:** A server is software that includes an operating system and the operating system configuration settings necessary to enable the operating system to attain an operational state that is capable of supporting application software workloads and is accessible remotely through designated network address(es).

4) **Xterity Cloud / ON Cloud Services:** Services that are operational within and between Xterity Cloud datacenters.

5) **Xterity Cloud / OFF Cloud Services:** Services that are operational between Xterity Cloud datacenters and any other infrastructure platform or datacenter.

Summary

Both P-BaaS and E-BaaS data backup services support the restoration of a file, a group of files, or a whole server via a simple boot disk.

Other backup platforms require a manual rebuild of the server's OS drivers and apps following a postvirus restore. In addition, with P-BaaS and E-BaaS; unlike traditional local-only backup solutions, the backup data is not located on connected media (e.g. USB drive or NAS device) that can be locked by ransomware or easily effected by a virus rendering it useless.

One of the key differences between E-BaaS and P-BaaS is that with E-BaaS the partner performs backup status monitoring but can share this responsibility with end users via email notification mechanisms. With P-BaaS Egenera pro-actively monitors backup processes and works closely with the partner to ensure all issues are identified, communicated and properly addressed.

E-Bass requires less backup technology knowledge and provides a quicker time to revenue for partners but does require the partner to perform all ordering, installation and backup status monitoring processes.

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