

## DISASTER RECOVERY SERVICES AND CUSTOMER INVOKED FAILOVER SERVICES

### 灾难恢复服务和客户调用的故障切换服务

#### SERVICE DESCRIPTION DOCUMENTATION

##### 服务说明文档

The following services apply to Customers that have purchased these optional services, to the extent available, in connection with its subscription to SAP HANA Enterprise Cloud services, S/4HANA Cloud extended edition, SAP ERP, private cloud edition, RISE with S/4HANA Cloud, private edition, SAP ERP, private cloud edition, tailored option, or RISE with S/4HANA Cloud, private edition, tailored option under an applicable Order Form.

以下服务适用于在依据相应订购单订阅 SAP HANA Enterprise Cloud [HANA 企业云]服务、SAP S/4HANA Cloud (扩展版) [ERP 云扩展版]、SAP ERP (私有云版本) [企业资源规划私有云版本]、RISE with S/4HANA Cloud (私有云版本) [ERP 云业务转型即服务私有云版本]、SAP ERP (私有云版本) 定制选项[企业资源规划私有云版本定制选项]或 RISE with SAP S/4HANA Cloud (私有云版本) 定制选项[ERP 云业务转型即服务私有云版本定制选项]的情况下，已购买这些可选服务（在可用范围内）的客户。

## 1. DISASTER RECOVERY SERVICES

### 灾难恢复服务

#### 1.1. Definitions

##### 定义

Definitions used but not defined in this Service Description shall have the meaning ascribed to them in the agreement under which Customer purchased the services.

本服务说明中使用的但未定义的定义应适用客户购买服务所依据的协议中对其赋予的含义。

“**Disaster**” means an event of substantial extent causing significant disruption of the delivery of the Cloud Services and may include physical damage or destruction, to the SAP data center or Computing Environment. Disasters can be natural disasters (such as floods, hurricanes, tornadoes or earthquakes) and/or human-induced disasters (including hazardous material spills, infrastructure failure, and bio- terrorism). A Disaster is typically not limited to one individual system or landscape but larger parts of an infrastructure.

“**灾难**”是指具有重大影响的事件，可导致云服务的交付严重中断，并可能会对 SAP 数据中心或计算环境造成物理损坏或破坏。灾难可能是自然灾害（比如，洪水、飓风、龙卷风或地震）和/或人为灾难（包括有害物质泄漏、基础架构故障和生物恐怖活动）。灾难通常不仅波及某个系统或架构，而是会影响大部分基础架构。

“**Disaster Recovery Services**” (or “**DR Services**” or “**DR**”) means the disaster recovery service, process, policies and procedures initiated by SAP that are related to preparing for recovery or continuation of technology or infrastructure identified in the applicable Order Form as included in the DR Services. DR is not a process to overcome outages of isolated systems due to hardware or software incidents (i.e., DR is not a substitute or replacement for System Availability Service Levels).

“**灾难恢复服务**”（或“**DR 服务**”或“**DR**”）是指旨在恢复或持续运行在相应订购单中指明包含在灾难恢复服务中的技术或基础架构且由 SAP 启动的灾难恢复服务、流程、政策和程序。灾难恢复服务并非旨在克服因硬件或软件故障造成的孤立系统中断的流程（即，灾难恢复服务并不是系统可用性服务水平的代名词）。



“Short Distance DR” or “Metro DR” means a Disaster Recovery Service in which SAP uses synchronous replication (if possible) between primary and failover systems. This typically means that the secondary data center is less than 50 to 80km away from the primary data center, providing lower cost and smaller RPO but more risk regarding a local disaster impacting both data centers.<sup>1</sup>

“短距离 DR”或“同城 DR”是指 SAP 在主系统和故障切换系统之间使用同步复制（如果可能）的灾难恢复服务。这通常意味着二级数据中心距离主要数据中心小于 50 至 80 千米，此方法耗费的成本更低，造成的 PRO 较短，但因地方灾难可能会同时影响两个数据中心，所以风险较大。<sup>1</sup>

“Long Distance DR” or “Regional DR” means a Disaster Recovery Service in which SAP uses asynchronous replication only between primary and failover systems. This typically means that the secondary data center is over 50 to 80km away from the primary data center, to minimize risk of a local disaster affecting both data centers.<sup>1</sup>

“远距离 DR”或“区域 DR”是指 SAP 在主系统和故障切换系统之间仅使用异步复制的灾难恢复服务。这通常意味着二级数据中心距离主要数据中心超过 50 至 80 千米，该方法可最大限度地降低地方灾难同时影响两个数据中心的危险。<sup>1</sup>

“RPO” (or “Recovery Point Objective”) means the maximum period in which Customer data may be lost due to a Disaster (i.e. time between last backup or last data replication and point in time a Disaster occurred). RPO mainly depends on the replication mechanism between primary and failover systems. Synchronous replication results in RPO=0 but is only applicable for Short Distance DR. Asynchronous replication, typically for Long Distance DR, will result in RPO=30 minutes.

“RPO”（或“恢复点目标”）是指因灾难导致客户数据丢失的最大期间（即，最后一次备份或最后一次数据复制到灾难发生之间的时间）。RPO 主要取决于主系统和故障切换系统之间的复制机制。同步复制的 RPO=0，但仅适用于短距离 DR。异步复制通常适用于远距离 DR，其 RPO=30 分钟。

“RTO” (or “Recovery Time Objective”) means the duration of time in which the PRD is unavailable in the event of a Disaster (i.e. time between a Disaster and point in time the systems are available again).

“RTO”（或“恢复时间目标”）是指发生灾难时 PRD 不可用的时间段（即，从灾难发生到系统恢复可用的时间）。

- 1.2. If purchased by Customer, SAP will provide Disaster Recovery Services as outlined herein for PRD systems, and for HEC Services and Tailored Option Services, specifically for those PRD systems indicated in the System Set-Up Table of Customer’s Order Form. SAP’s provisions of the DR Services are contingent upon Customer fulfilling certain prerequisites and conditions. SAP shall be excused from its DR Services obligations to the extent (and for the duration during which) Customer fails to fulfill any of the following pre-requisites and such failure prevents SAP from performing the applicable DR Services:

如由客户购买，SAP 将为 PRD 系统、HEC 服务和定制选项服务，尤其是客户订购单的系统配置表中规定的 PRD 系统，提供本文所述的灾难恢复服务。SAP 将提供 DR 服务，但前提是客户满足特定先决条件。如客户未能满足以下任意前提条件且此类不满足导致 SAP 无法执行相应的 DR 服务，在前述情况发生的期间内，SAP 可免于履行其 DR 服务义务：

- 1.2.1. The applicable components are technically used as provided by SAP; any custom or third party developments or modifications affecting applicable components are not covered (excluding development/modifications done in ABAP only systems using SAP ABAP standard development tools, and excluding any third party products embedded in the SAP software).

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<sup>1</sup> Unless otherwise indicated herein, the distances/regions and conditions can be different if a hyperscale service such as Amazon Web Services, Microsoft Azure or Google Cloud is used to provision the Cloud Service. See <https://aws.amazon.com/compliance/data-center/data-centers/>, <https://azure.microsoft.com/global-infrastructure> or <https://cloud.google.com/compute/docs/regions-zones/> for additional information.

除非本文另有说明，否则在使用超大规模云服务（如 Amazon Web Services、Microsoft Azure 或 Google Cloud）提供云服务的情况下，距离/区域和条件可能会有所不同。有关其他信息，请参见 <https://aws.amazon.com/compliance/data-center/data-centers/>、<https://azure.microsoft.com/global-infrastructure> 或 <https://cloud.google.com/compute/docs/regions-zones/>。

从技术上而言，遵照 SAP 的规定使用相关组件，但不包括会影响相应组件的任何自定义或第三方开发或修改（使用 SAP ABAP 标准开发工具对仅使用 ABAP 编程语言的系统所做的开发/修改除外，嵌入 SAP 软件中的任何第三方产品除外）。

- 1.2.2. The applicable systems stay within boundaries regarding size and layout as set forth in the Agreement.

相关系统的大小和布局在协议规定的范围之内。

- 1.2.3. Interfaces in DR scope are limited to interfaces/protocols supported by SAP systems out of the box (e. g. RFC, web service calls, Flat Files, XML and IDocs) for components located in the data center. Any interfaces that require additional solutions or components within the Computing Environment, as well as external connectivity, are outside of the DR Services scope.

就位于数据中心的组件而言，DR 范围内的接口限于 SAP 系统直接支持的接口/协议（如 RFC、Web 服务调用、平面文件、XML 和 IDoc）。在计算环境中需要附加解决方案或组件，或需要外部连接的任何接口均不在 DR 服务范围之内。

- 1.2.4. All repositories containing Customer Data that need to be replicated to the DR site are databases; otherwise, RPO times can be substantially longer, thus does not fall under the definition of standard DR Services.

所有包含客户数据且需要复制到 DR 站点的资源库都是数据库；否则，RPO 时间会大幅延长，从而导致不符合标准 DR 服务的定义。

- 1.3. For HEC Services and Tailored Option Services, the DR Services RTO/RPO options are set forth in the table below. Generally, the standard RTO is 12 hours, but RTO of 4 hours may be available for defined scenarios if agreed by the parties in the Order Form. For HEC Services and Tailored Option Services, the DR Services option purchased for the respective components is stated in the relevant column of the System Set-Up Table in the Order Form via the applicable designation set forth in the table below.

对于 HEC 服务和定制选项服务，DR 服务 RTO/RPO 选项如下表所示。通常，标准 RTO 为十二（12）小时，但如果双方已在订购单中达成一致，则针对指定场景可提供四（4）小时的 RTO。对于 HEC 服务和定制选项服务，为相应组件购买的 DR 服务选项在订购单系统配置表的相关列中通过相应标识予以说明，具体参见下表。

DR designation in Order Form 订购单中的 DR 标识	RTO	RPO
Blank 空白	None 无	None 无
DR_12h_30	12h 12 小时	30 min 30 分钟
DR_4h_30	4h 4 小时	30 min 30 分钟
DR_12h_0	12h 12 小时	0 min 0 分钟
DR_4h_0	4h 4 小时	0 min 0 分钟

If Customer purchased DR Services based on Long Distance and Short Distance designations, please see Section 1.8 below.

如客户已根据远距离和短距离标识购买 DR 服务，请参见下文第 1.8 节。

- 1.4. If Customer has purchased the optional Disaster Recovery services for RISE with S/4HANA Cloud, private edition, SAP ERP, private cloud edition, or S/4HANA Cloud, extended edition, the RTO is 12 hours and RPO is 30 minutes for Long Distance DR and for Short Distance DR, the RTO is 12 hours and the RPO is 0 minutes. For Google

Cloud and Microsoft Azure, Short Distance DR is only available in selected regions. If Customer has purchased the optional SAP S/4HANA Cloud, 4 hour recovery time objective, private edition or SAP ERP, 4 hour recovery time objective, private cloud edition, the RTO is 4 hours (instead of 12 hours) and the RPO remains unchanged as indicated in this section.

如客户已购买面向 RISE with S/4HANA Cloud (私有云版本) [ERP 云业务转型即服务私有云版本]、SAP ERP (私有云版本) [企业资源规划私有云版本]或 SAP S/4HANA Cloud (扩展版) [ERP 云扩展版]的可选灾难恢复服务, 则对于远距离 DR, RTO 为十二 (12) 小时, RPO 为三十 (30) 分钟; 对于短距离 DR, RTO 为十二 (12) 小时, RPO 为零 (0) 分钟。对于 Google Cloud 和 Microsoft Azure, 短距离 DR 仅在选定区域可用。如客户购买了可选的 SAP S/4HANA Cloud (私有云版本) [ERP 云私有云版本]四 (4) 小时恢复时间目标或 SAP ERP (私有云版本) [企业资源规划私有云版本]四 (4) 小时恢复时间目标, 则 RTO 为四 (4) 小时 (而不是十二 (12) 小时), 而 RPO 如本节所示保持不变。

- 1.5. Performance characteristics and System Availability may be reduced while operating under DR Services failover (the System Availability Service Level will not be lower than 95%).

在执行 DR 服务故障切换期间, 软件性能和系统可用性可能会有所下降 (系统可用性服务水平不得低于 95%)。

- 1.6. **Other DR services are not in the scope of SAP's standard DR Services.** For HEC Services and Tailored Option Services, if requested by the Customer, such additional DR Services ("Additional DR Services") would need to go through a further DR assessment based on Customer architecture and requirements. Details on the implementation of any such Additional DR Services would be agreed upon with Customer, including revised estimated failover times and maximum data loss, and the parties would mutually agree to the applicable RPO and RTO for such Additional DR Services as result of the implementation in a Change Request or an amendment to the Order Form. As part of this process, SAP would use reasonable efforts to bring RPO/RTO for the System Setup as defined in the Order Form in a similar range as for the defined packages. These Additional DR Services are not available for S/4HANA Cloud, extended edition, SAP ERP, private cloud edition, and RISE with S/4HANA Cloud, private edition.

**其他 DR 服务不在 SAP 标准 DR 服务的范围内。**对于 HEC 服务和定制选项服务, 如客户请求, 此类附加 DR 服务 (以下简称“附加 DR 服务”) 需要根据客户的基础架构和需求执行进一步的评估。SAP 将与客户就任何此类附加 DR 服务商讨实施细节, 包括修改估算的故障切换时间和最大的数据损失, 并且双方将在变更请求或订购单修订版中共同商定实施此类附加 DR 服务后的相应 RPO 和 RTO。作为此流程的一部分, SAP 将尽合理努力使订购单中定义的系统设置 RPO/RTO 与指定包的 RPO/RTO 处于接近范围之内。这些附加 DR 服务不适用于 SAP S/4HANA Cloud (扩展版) [ERP 云扩展版]、SAP ERP (私有云版本) [企业资源规划私有云版本]和 RISE with S/4HANA Cloud (私有云版本) [ERP 云业务转型即服务私有云版本]。

- 1.7. **Regular DR Testing.** SAP offers one annual DR failover-test as part of the DR Services to test the DR Services. SAP shall promptly re-perform any DR recovery tests that fail to achieve the applicable standards and report any failures to Customer. For DR Services readiness, Customer will fulfill its infrastructure and business preparation as set forth in the Order Form, and as may be further mutually agreed between the parties in a Change Request or amendment to the Order Form. Customer business continuity objectives may require additional Customer efforts in addition to and beyond the scope of the Cloud Services and/or DR Services hereunder. Each Disaster Recovery Service implementation requires Customer's testing and causes additional Agreed Downtimes. The System Availability calculation for the affected month(s) shall exclude these additional Agreed Downtimes.

**定期 DR 测试。**作为 DR 服务的一部分, SAP 将每年执行一次 DR 故障切换测试, 以测试 DR 服务。SAP 应及时重新执行任何未达到相应标准的 DR 恢复测试, 并向客户报告任何未达标情况。执行 DR 服务准备时, 客户将按照订购单中的规定以及双方可能在变更请求或订购单修订版中约定的其他要求完成基础架构和业务准备。除了本补充下的云服务和/或 DR 服务范围之外, 要实现客户的业务连续性目标, 可能还需要客户做出进一步努力。每次灾难恢复服务实施均需要客户测试并会造成额外的约定的停机时间。受影响月份的系统可用性计算不包括这些额外的约定的停机时间。

- 1.8. For DR Services purchased based on Short Distance and Long Distance options:

对于基于短距离和长距离选项购买的 DR 服务:

The relevant parameters depend on the chosen DR layout (Short Distance DR/ Long Distance DR)\*, the database platform used, and the adherence to above listed conditions for standard DR Services. The predefined parameters for these standard DR Services are set forth below.

相关参数因选定的 DR 布局（短距离 DR/远距离 DR）\*、所使用的数据库平台和对上述标准 DR 服务条件的遵守情况而异。这些标准 DR 服务的预定义参数如下文所述。

\*For S/4HANA Cloud, extended edition, the DR layout is Long Distance DR unless Long Distance DR is not available in the region of the applicable data center. In such event, Short Distance DR will be provided.

对于 SAP S/4HANA Cloud（扩展版）[ERP 云扩展版]，DR 布局为长距离 DR，除非适用数据中心所在区域不提供远距离 DR。在这种情况下，将提供短距离 DR。

	<b>Short Distance DR (Metro DR)</b> 短距离 DR（同城 DR）	<b>Long Distance DR (Regional DR)</b> 远距离 DR（区域 DR）
Database: SAP HANA 数据库：SAP HANA	Single Node <sup>(1)</sup> : RTO=12hrs; RPO=30mins 单一节点 <sup>(1)</sup> : RTO=12 小时; RPO=30 分钟  Multi Node <sup>(2)</sup> : RTO=12hrs; RPO=0hrs 多节点 <sup>(2)</sup> : RTO=12 小时; RPO=0 小时	RTO=12hrs; RPO=30mins RTO=12 小时; RPO=30 分钟
Database: Sybase ASE 数据库：Sybase ASE	RTO=12hrs; RPO=30mins <sup>(3)</sup> RTO=12 小时; RPO=30 分钟 <sup>(3)</sup>	RTO=12hrs; RPO=30mins RTO=12 小时; RPO=30 分钟

<sup>(1)</sup> HANA Single Node: describes a configuration, where the HANA database system resides on one single server node.

HANA 单一节点：描述一种配置，其中 HANA 数据库系统驻留于一个单一服务器节点上。

<sup>(2)</sup> HANA Multi Node (or HANA Scale Out System): describes a HANA database system that is installed on more than one host but identified by a single system ID (SID). It is perceived as one unit from the perspective of the administrator, who can install, update, start up, shut down, or backup the system as a whole.

HANA 多节点（或 HANA 扩展系统）：描述一种 HANA 数据库系统，该系统安装于多个主机，但通过一个单一系统 ID（SID）进行标识。管理员可将其视作一个单元，以整体形式安装、更新、启动、停机或备份该系统。

<sup>(3)</sup> Sybase ASE database replication is currently not supported in continuous mode, which would be the prerequisite for an RPO of 0. If such feature becomes available and the respective systems are updated to that new version and successfully tested, both parties will at that time agree on a modified RPO of 0 hours via a Change Request or amendment to Order Form without additional service charge.

目前，持续模式下暂不支持 Sybase ASE 数据库复制功能，而这是 RPO 时间为 0 的前提条件。如提供了此功能，且相应系统已更新到新版本并成功通过了测试，届时双方将通过变更请求或订购单修订版将协定的 RPO 改为 0，且不另行收取服务费。

## 1.9. Disaster Recovery Services for SAP Content Server.

### SAP 内容服务器灾难恢复服务。

DR Services for SAP Content Server (“CSDR”) is an optional service available only for HEC Services and Tailored Option Services only. If purchased by Customer, SAP will provide DR Services for SAP Content Server with an RTO of 12 hours and an RPO of 90 minutes. CSDR is stated in the relevant column of the System Set-Up Table in the Order Form using the CSDR designation DR\_12h\_90.

SAP 内容服务器的 DR 服务（以下简称“CSDR”）是一项可选服务，仅适用于 HEC 服务和定制选项服务。如由客户购买，SAP 将为 SAP 内容服务器提供 DR 服务，且 RTO 为十二（12）小时，RPO 为九十（90）分钟。CSDR 在订购单系统配置表的相关列中使用 CSDR 标识 DR\_12h\_90 予以说明。

For DR Services purchased based on Short Distance and Long Distance options:

对于基于短距离和长距离选项购买的 DR 服务：

	<b>Short Distance DR (Metro DR)</b> 短距离 DR（同城 DR）	<b>Long Distance DR (Regional DR)</b> 远距离 DR（区域 DR）
Database: SAP MaxDB <sup>(1)</sup>	RTO=12hours; RPO=90mins	RTO=12hours; RPO=90mins
数据库：SAP MaxDB <sup>(1)</sup>	RTO=12 小时；RPO=90 分钟	RTO=12 小时；RPO=90 分钟

<sup>(1)</sup>SAP Content Server is only available with the SAP MaxDB database.

SAP 内容服务器仅适用于 SAP MaxDB 数据库。

## 2. **OPTIONAL CUSTOMER INVOKED FAILOVER (“CIF”) SERVICES FOR HEC SERVICES AND TAILORED OPTION SERVICES**

面向 HEC 服务和定制选项服务的可选客户调用故障切换（以下简称“CIF”）服务

CIF services is an optional service available only for HEC Services and Tailored Option Services which can be agreed between SAP and Customer for certain components as set forth in the System Set-Up Table of the Order Form in addition to DR Services (DR Services is a pre-requisite for CIF services). For components for which Customer purchases CIF services, Customer may initiate the failover/failback between the primary data center and secondary data center (normally used for DR Services) without the occurrence of a Disaster.

CIF 服务是一项可选服务，仅适用于 HEC 服务和定制选项服务。除 DR 服务外（DR 服务是 CIF 服务的前提），SAP 与客户还可以就订购单系统配置表中规定的某些组件约定 CIF 服务。对于客户购买 CIF 服务的组件，客户可以在未发生灾难的情况下，在主要数据中心和二级数据中心（通常用于 DR 服务）之间启动故障切换/故障恢复。

The respective components for which CIF services is purchased will be marked with the “CIF” designation appended to the DR designation in the System Set-up Table. By way of example, a CIF services designation of “DR\_12h\_0\_CIF” means that Customer may invoke CIF services without the occurrence of a Disaster for that component and for which the agreed upon DR Services has an RTO of 12 hours and an RPO of 0 minutes.

购买 CIF 服务的各个组件将采用系统配置表中 DR 标识后随附“CIF”标识的形式进行标记。举例来说，“DR\_12h\_0\_CIF”的 CIF 服务标识是指客户可以在该组件未发生灾难的情况下调用 CIF 服务，且约定的 DR 服务的 RTO 为十二（12）小时，RPO 为零（0）分钟。

CIF services is only available for select configurations and data centers. Pre-requisites, technical requirements and scenarios for which CIF services can apply depend on the concrete technical solution for the DR Services and are described in additional documentation.

CIF 服务仅适用于所选的配置和数据中心。可适用 CIF 服务的前提条件、技术要求和场景取决于 DR 服务的具体技术解决方案，详见附加文档。

For clarity, performance characteristics and System Availability may be reduced while operating under CIF services (the System Availability Service Level will not be lower than 95%).

为明确起见，在执行 CIF 服务期间，软件性能和系统可用性可能会有所下降（系统可用性服务水平不得低于 95%）。