**Sangfor HCI**

**Proactive Service Report**



# Non-Disclosure Agreement

The confidential information of customers obtained during this service is only used by Sangfor to provide solutions and services (including network planning, design, implementation, O&M, and optimization) to customers. Without customers' consent, Sangfor promises not to use the confidential information for purposes other than those related to customer services or disclose it to irrelevant third parties.

Sangfor Technologies Inc.

Chapter 1 Rights and interests of service

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| --- | --- | --- | --- |
| Service stage | Service items | service standard | Delivery |
| Service preparation | Customer appointment | In order to better perform the service, the engineer will make a formal appointment with you by phone / email, and will provide the template of this report first, so that you can understand the service content and standard in advance | The Proactive Service Report template |
| Product operation  diagnose | Delivery of service concept  Use communication | Actively deliver the service concept, clarify the service objectives, and effectively communicate with your current product usage situation, timely solve your problems, and eliminate the operation and maintenance obstacles. | / |
| Equipment operation status inspection  Best Practice Check | Through tool automation and manual in-depth spot inspection, check your product operation, handle and adjust abnormal / optimization items to ensure that your business operates on a healthy and stable platform | / |
| Gap analysis  With the suggestion | Interpretation of the diagnostic results and recommendations | For the disposed anomalies / optimization items, interpret the corresponding functional features and follow-up maintenance suggestions to help you better understand and use the product skillfully  For your existing business, provide multi-dimensional deepening suggestions for you to make the optimal planning for business development | / |
| training for specific posts | Train your operation and maintenance team on new versions and new values, quickly get insight into how the functional value of the new version matches the existing business requirements, and help you better use the platform | Directional training materials |
| Service Reporting (Optional) | Conduct quantitative and qualitative analysis of the overall operation status and gap for your management, business operation and suggestions on the cloud, overall service situation and effect, and deep planning value based on the overall business | Active Service Report, |
| Service end | Feedback of the diagnosis and analysis results | Feedback the service to the customer by email and other official channels to ensure that the service can be reviewed and tracked | The Proactive Service Report, |
| Work order evaluation | For this service, you can evaluate the service, to facilitate us to provide you with continuous high quality, professional service | Work order evaluation information |

Chapter 2 Service summary

Based on the best practice inspection standards of the product, a total of XX items were tested, including stable reliability XX items, substandard XX items, and qualified XX items; XX high-performance items, XX non compliant items, and XX compliant items.

At present, the platform has been running steadily for XX days, and the stability of the XX dimension has reached the optimal level, and we found that the XX function has played an indispensable role in guaranteeing your business. For details, see: Summary of functional effectiveness; however, there are still missing items in XX, which will have a certain impact on the continuity of the core business. For details, see: Summary of substandard best practices;

Current platform performance indicators are mostly in line with best practice, mainly reflected in (platform configuration, computing virtualization, network virtualization, storage virtualization, virtual machine, data protection) are the optimal, but if you hope platform carrying business performance reach the optimal, Suggestions also need to optimize based on the performance of the substandard, detailed see: best practice substandard item summary;

**Summary of functional effectiveness**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Check the dimensions | | functional characteristics | Description of the functions / features | | | Effective function | Current configuration situation of the function |
| {%tr if check\_ha\_vms%} | | | | | | | |
| Stable and reliable | | High availability of HA | When the host fails, the virtual machine HA will trigger automatically, which quickly pulls the service virtual machine in the healthy host to ensure that the business is not affected | | | **sum up:**  {{check\_ha\_vms.worth\_realization\_sum.value}}  **[Click on it for more details](#_7.1.1 高可用HA)** | 1. **HA sensitivity:**   {{check\_ha\_vms.ha\_sense.value}}  {{check\_ha\_vms.ha\_sense.notice}}   1. **In the protected virtual machine:**   {{check\_ha\_vms.ha\_vms.value}}  Virtual machine details [click to view](#_7.1.1 High availability of HA)   1. **Unprotected virtual machines:**   {{check\_ha\_vms.no\_ha\_vms.value}}  Virtual machine details [click to view](#_7.1.1 High availability of HA)   1. **Functional Effective Estimation:**   {{check\_ha\_vms.worth\_display.value}} |
| {%tr else %} | | | | | | | |
| Stable and reliable | High availability of HA | | | When the host fails, the virtual machine HA will trigger automatically, which quickly pulls the service virtual machine in the healthy host to ensure that the business is not affected | |  |  |
| {%tr endif%} | | | | | | | |
| {%tr if check\_vm\_replica%} | | | | | | | |
| Stable and reliable | Copy mechanism | | | Provide data redundancy protection through data multiple copy mechanism and provide perfect troubleshooting mechanism to ensure that business is not affected in case of host / disk failure | | **sum up:**  {{check\_vm\_replica.worth\_realization\_sum.value}}  **[Click on it for more details](#_7.1.2副本机制)** | **1. Copy configuration status:**  {{check\_vm\_replica.replica\_config.value}}  [Click on it for more details](#_7.1.2副本机制)  **2. Copy redundancy situation:**  {{check\_vm\_replica.replica\_redundancy.value}}  **3. Copy figurconfiguration:**  {{check\_vm\_replica.replica\_capacity.value}} |
| {%tr else %} | | | | | | | |
| Stable and reliable | Copy mechanism | | | Provide data redundancy protection through data multiple copy mechanism and provide perfect troubleshooting mechanism to ensure that business is not affected in case of host / disk failure | |  |  |
| {%tr endif%} | | | | | | | |
| {%tr if check\_memory\_cpu\_config%} | | | | | | | |
| Stable and reliable | CPU / memory overallocation | | | Support users to customize each physical host memory / CPU over-ratio, can overallocate computing resources | | **sum up:**  {{check\_memory\_cpu\_config.CPU\_overuse\_desc}}  {{check\_memory\_cpu\_config.memory\_overuse\_desc}} | **1. Total resources of the cluster before overallocation:**  {{check\_memory\_cpu\_config.over\_before.value}}  **2. Total resources of the cluster after overallocation:**  {{check\_memory\_cpu\_config.over\_after.value}}  **3. Total currently existing cluster resources:**  {{check\_memory\_cpu\_config.config\_used.value}}  4. {{check\_memory\_cpu\_config.remain\_desc}} |
| {%tr else %} | | | | | | | |
| Stable and reliable | CPU / memory overallocation | | | Support users to customize each physical host memory / CPU over-ratio, can overallocate computing resources | |  |  |
| {%tr endif%} | | | | | | | |
| {%tr if check\_drs%} | | | | | | | |
| Stable and reliable | DRS | | | When the cluster load is too high, automatically select the optimal host operation for the virtual machine to ensure the continuous business stability and the cluster host load balance | | **sum up:**  {{check\_drs.worth\_display.value}} | 1. **functional status:**   {{check\_drs.enable.value}}   1. **Function configuration (view specific virtual machine scheduling):**   Number of virtual machines not protected: {{check\_drs.unprotected\_vm\_nums.value}}  **cause:**  **[Click to jump](#未配置DRS的虚拟机列表)**  **To protect the number of virtual machines:**  {{check\_drs.protected\_vm\_nums.value}} |
| {%tr else %} | | | | | | | |
| Stable and reliable | DRS | | | When the cluster load is too high, automatically select the optimal host operation for the virtual machine to ensure the continuous business stability and the cluster host load balance | |  |  |
| {%tr endif%} | | | | | | | |
| {%tr if check\_drx%} | | | | | | | |
| Stable and reliable | DRX | | | When the computing resources are insufficient, the CPU and memory resources are automatically added to the virtual machine to ensure that the virtual machine utilization rate is maintained at a reasonable level | | **sum up:**  {{check\_drx.realization\_sum.value}}  **detailed information:**  {{check\_drx.worth\_display.value}} | 1. **functional status:**   {{check\_drx.enable.value}}   1. **Configured virtual machine details:**   **To protect the number of virtual machines:**  {{check\_drx.protected\_vm\_nums.value}}  Unprotected virtual machines number:  {{check\_drx.unprotected\_vm\_nums.value}} |
| {%tr else %} | | | | | | | |
| Stable and reliable | DRX | | | When the computing resources are insufficient, the CPU and memory resources are automatically added to the virtual machine to ensure that the virtual machine utilization rate is maintained at a reasonable level | |  |  |
| {%tr endif%} | | | | | | | |
| {%tr if check\_memory\_ecc%} | | | | | | | |
| Stable and reliable | internal storage ECC | | | HCI automatically detects ECC error, ECC bad block isolation, and alarms the memory number on the interface | | **sum up:**  {{check\_memory\_ecc.worth\_display.value}} | **functional status:**  {{check\_memory\_ecc.enable.value}} |
| {%tr else %} | | | | | | | |
| Stable and reliable | internal storage ECC | | | HCI automatically detects ECC error, ECC bad block isolation, and alarms the memory number on the interface | |  |  |
| {%tr endif%} | | | | | | | |
| {%tr if check\_slow\_disk%} | | | | | | | |
| Stable and reliable | Slow disk detection | | | HCI automatically detects the slow disk , isolation disk, and alarms the disk number at the interface | | **sum up:**  {{check\_slow\_disk.worth\_realization\_sum.value}}  **[Click on it for more details](#_7.1.5 slow disk detection)** | **1. Functional status:**  {{check\_slow\_disk.status.value}}  **2. Effective status:**  {{check\_slow\_disk.volumes.value}} |
| {%tr else %} | | | | | | | |
| Stable and reliable | Slow disk detection | | | | HCI automatically detects the slow disk card, isolation disk, and alarms the disk number at the interface |  |  |
| {%tr endif%} | | | | | | | |
| {%tr if check\_raid\_abnormal%} | | | | | | | |
| Stable and reliable | Monitoring of the raid card exception | | | | HCI automatically detects RAID card errors, isolation faulty host in time, and quickly restores the business system to avoid affecting the stability of the whole cluster. | **sum up:**  {{check\_raid\_abnormal.worth\_display.value}} | **functional status:**  {{check\_raid\_abnormal.enable.value}} |
| {%tr else %} | | | | | | | |
| Stable and reliable | Monitoring of the raid card exception | | | | HCI automatically detects RAID card errors, isolation faulty host in time, and quickly restores the business system to avoid affecting the stability of the whole cluster. |  |  |
| {%tr endif%} | | | | | | | |
| Performance excellence | Important virtual machine inspection | | | | Through large-page memory, high-performance cache layer, hostCPU and other technologies to meet the high performance requirements of important virtual machines, to ensure the smooth operation of the business |  | **Virtual Machine detection details:**  [Click to jump](#高性能虚拟机) |

**Summary of best practices failures**

Note: In order to ensure the continuous, stable and efficient operation of the business, your company pays close attention to the missing proposal. At the same time, the deeply convincing engineers will also follow up in time and provide technical support within their capacity.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Check the dimensions | functional characteristics | Description of the functions / features | Test instructions | Recommended measures and their impact |
| Stable and reliable | System disk raid1 | The system disk has 100% data redundancy, providing the highest data security guarantee, ensuring that the host is still stable operation when a single disk fails |  |  |
| Host sub-health monitoring | Identify and display the host (sub-health host) at risk of suspended death or already in the state of suspended death automatically |  |  |
| Dynamic resource scheduling for the DRS | Automatically migrate virtual machines on physical hosts with too high loads to other lower-load hosts, ensuring continuous business stability and load balancing of cluster hosts. |  |  |

Chapter 3 Device running status diagnosis

Attachment: Inspection Report generated by aDeploy tool inspection is attached here

Chapter 4 Best practice for the CheckList

**Note: Some of the following test items have not been automated, which need to be checked manually. Please pay attention to the customer presentation report. Please delete this note!**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Check the dimensions | functional characteristics | Description of the functions / features | Test instructions | | Recommended measures and their impact |
| Stable and reliable | System disk raid1 | The system disk has 100% data redundancy, providing the highest data security guarantee, ensuring that the host is still stable operation when a single disk fails | Check whether the system disk of cluster host is RAID 1: currently test XX (standard / standard) | | A single disk will appear a single point of failure risk, once the disk failure, will lead to the direct fault shutdown of the host. At the same time, the bad road in the replacement of the time also need to turn off the offline replacement. It is suggested to arrange a time window with the customer to transform the system disk into RAID 1 |
| Host sub-health monitoring | Identify and display the host (sub-health host) at risk of suspended death or already in the state of suspended death automatically | Check whether the platform is configured with sub-health monitoring according to best practices: currently testing XX (standard / substandard) | | The sub-health monitoring is not enabled, and the fault detection and identification of the host in advance. It is suggested to set relevant options according to the standard scheme to ensure the automatic migration of the business virtual machine from the sub-health host to the healthy host before the failure, so as to ensure the continuous operation of the business system in a healthy and reliable host to the maximum extent. |
| {%tr if check\_drs%} | | | | |
| Dynamic resource scheduling for the DRS | Automatically migrate virtual machines on physical hosts with too high loads to other lower-load hosts, ensuring continuous business stability and load balancing of cluster hosts. | Check that the platform is configured for the DRS by best practices:  {{check\_drs.enable.value}} | | Unallocating resource scheduling will lead to low resource utilization and waste; the hosts with heavy load are prone to resource overallocation, which will reduce the performance and stability of virtual machines, thus affecting the normal operation of business. |
| {%tr else %} | | | | |
| Dynamic resource scheduling for the DRS | Automatically migrate virtual machines on physical hosts with too high loads to other lower-load hosts, ensuring continuous business stability and load balancing of cluster hosts. |  |  | |
| {%tr endif%} | | | | |
| {%tr if check\_raid\_abnormal%} | | | | |
| Monitoring of the raid card exception | Monitor the status of RAID, if the RAID card is detected, the virtual machine on the host will perform active HA to avoid the entire storage or cluster business interruption. | Check whether the platform enables RAID card status detection:  {{check\_raid\_abnormal.enable.value}} | | When the host finds abnormal read and write, the physical host corresponding to the RAID card cannot be isolated in time, and active HA on the virtual machine on the host, which affects the stability of the whole cluster and leads to the interruption of the whole storage or cluster business. |
| {%tr else %} | | | | |
| Monitoring of the raid card exception | Monitor the status of RAID, if the RAID card is detected, the virtual machine on the host will perform active HA to avoid the entire storage or cluster business interruption. |  | |  |
| {%tr endif%} | | | | |
| Physical network alarm notification settings | Monitor the hardware indicators of the host, and report the alarm information in time when the abnormal time length exceeds a certain threshold. | Check whether the platform is configured according to best practices for network monitoring: currently detect XX (standard / substandard) | | Failure to check the box will lead to the failure of the host offline, network card compatibility, network card damage, network card optical module abnormality, network port error package and other faults affecting the business, increasing the probability of the business affected. It is recommended that all the indicators are checked |
| Quality version timely upgrade | Upgrade to the deep convincing recommended version | Whether the version number of the detection platform is latest: the system is not installed as follows:  [Click on it for more details](#_7.1.4 未安装最新补丁) | | The latest patch can solve several known problems and ensure that the platform remains in a more stable state. It is recommended to update it as soon as possible |
| Business performance protection | ASAN provides intelligent speed-limiting function. The reconstruction module intelligently adjusts the I / 0 occupied by the reconstruction according to the perception of the upper business I / 0, and quickly reconstruct the data on the premise of ensuring the normal operation of the business. | **Check whether the platform opens the intelligent speed limit: currently test XX (standard / substandard)** | | Data in the reconstruction process will occupy a part of the storage network bandwidth and disk performance, will seize the service bandwidth of the normal service, resulting in a slow service card |
| Regular bad scan | ASAN dynamically senses which hard disks are most likely to have bad channels in the cluster, which are scanned and combined with bad lane repair, greatly reducing the risk of data being in a "single copy" due to bad disks. | Check whether the platform sets the timing bad channel scan according to best practices: currently testing XX (standard / substandard) | | No effective risk assessment of the number of bad disks can be conducted, causing data loss due to the excessive number of bad disks. |
| Hot spare plate function | ASAN provides data hot spare disk protection, which can automatically replace the damaged HDD hard drive without manual intervention by the user; | Check whether the virtual storage volume is reserved as required: XX (standard / substandard) | | If the number of disk failures exceeds the redundancy mechanism of copies, data loss. It is suggested to add hot spares for all virtual storage volumes carrying important services, and plan the number of hot spares according to the copy data |
| data reconstruction | After the aSAN system detects that the disk or host offline exceeds a certain time threshold, the disk and host are automatically reconstructed. | **Check whether the platform starts data reconstruction: currently testing XX (standard / substandard)** | | If not open data reconstruction, fault data on the hardware although one or two copies of the data stored on other hardware, still can guarantee the normal read and writing of the virtual machine, but the storage volume redundancy has become low, if there is a copy of the hardware failure, will increase the risk of data loss, reduce the reliability of the system. It is recommended that all clusters turn on data reconstruction. |
| {%tr if check\_memory\_cpu\_config%} | | | | |
| Memory overmatch | According to the principle of on-demand allocation, the total amount of memory configured to the virtual machine can exceed the total memory of the physical server of the HCI cluster. | Check whether the memory overallocation of the platform is 100%: the memory overallocation ratio of the platform:  {{check\_memory\_cpu\_config.memory\_config\_ratio }} | | Excessive memory overallocation will lead to virtual machine memory competition, virtual machine memory performance reduction, resulting in slow service card. Virtual machine super large use of swap and frequent read and write scenarios, will continue to cause the system card slow, at this time, some virtual machine needs to close to solve. |
| CPU overmatch | According to the principle of on-demand allocation, the total amount of CPU configured for the virtual machine can exceed the total CPU amount of the HCI cluster physical server. | The CPU overscore of the inspection platform shall not exceed 200%: the current CPU overscore ratio of the detection platform:  {{check\_memory\_cpu\_config.cpu\_config\_ratio }} | | When the load of a large number of virtual machines on the host host is very high, it will seriously affect the performance of the virtual machine, and even cause lag. At this time, some virtual machines are closed to solve |
| {%tr else %} | | | | |
| Memory overmatch | According to the principle of on-demand allocation, the total amount of memory configured to the virtual machine can exceed the total memory of the physical server of the HCI cluster. |  | |  |
| CPU overmatch | According to the principle of on-demand allocation, the total amount of CPU configured for the virtual machine can exceed the total CPU amount of the HCI cluster physical server. |  | |  |
| {%tr endif%} | | | | |
| Memory usage | Memory usage refers to the actual consumption rate of the host by all virtual machines on the host | Check if the platform memory usage is below 80%: currently detects platform memory usage  {{check\_cluster\_resource\_cpu}} | | 1, if there is a memory overallocation, that means that if the allocated memory usage is high, there will be physical memory can not meet the situation, at this time there will be a virtual machine hanging.  2. When other hosts fail to trigger HA, the host with high utilization rate will not be able to provide sufficient resources to cooperate with the virtual machine, and the aging of HA will lead to long business interruption |
| CPU unilization ratio | CPU usage is the actual consumption rate of all virtual machines on the host | Check if the memory usage of the platform is less than 70%: currently detect the platform CPU usage  {{check\_cluster\_resource\_memory}} | | 1. If there is a CPU overallocation, it means that if the allocated CPU usage is high, the physical CPU will not meet the situation, and there will be a virtual machine hanging.  2. When other hosts fail to trigger HA, the host with high utilization rate will not be able to provide sufficient resources to cooperate with the virtual machine, and the aging of HA will lead to long business interruption |
| {%tr if check\_ha\_vms%} | | | | |
| HA machine-processed | When a physical machine fails, the abnormal virtual machine can be captured in time, and the abnormal virtual machine can be pulled up within 30s to protect the business continuity. | To test whether the HA sensitivity is medium-high or above:  {{check\_ha\_vms.ha\_sense.value}} | | Medium and low sensitivity in the fault state for 5 minutes to trigger HA, may not meet the high continuity requirements of the business, it is recommended to adjust. |
| Fault migration (HA) effectiveness situation | When the host of the virtual machine fails, the virtual machine with HA enabled automatically switches to other physical hosts | Check whether the virtual machine is on high availability HA function: At present, the following virtual machine is not on high availability:  {{check\_ha\_vms.no\_ha\_vms.value}} | | The virtual machine without high availability HA cannot be automatically switch when the running host fails, which will cause the direct and illegal shutdown of the virtual machine and affect the business |
| {%tr else %} | | | | |
| HA machine-processed | When a physical machine fails, the abnormal virtual machine can be captured in time, and the abnormal virtual machine can be pulled up within 30s to protect the business continuity. |  | |  |
| Fault migration (HA) effectiveness situation | When the host of the virtual machine fails, the virtual machine with HA enabled automatically switches to other physical hosts |  | |  |
| {%tr endif%} | | | | |
| The abnormal restart function takes effective | When the Guest system application layer of the virtual machine is not scheduled according to the heartbeat, disk IO and network traffic in the state of the virtual machine, it will automatically shut down and restart after a few minutes. | Check whether the virtual machine is on abnormal restart function: the following virtual machine is not on abnormal restart: click to view for details | | The virtual machine that does not open the abnormal restart function will interrupt the business for a long time when there is a black / blue screen, and will not adopt the automatic restart mechanism to pull up the business as soon as possible to increase the business interruption time and operation and maintenance workload |
| {%tr if check\_reliability\_score%} | | | | |
| Reliability Resource Rating | Intelligent recognition of scheduling benefits, execution of scheduling or provision of scheduling suggestions, resulting in positive business benefits and improved reliability after scheduling | {{check\_reliability\_score.host\_suggestion}}{% if check\_reliability\_score.host\_list %}， [click to view for details](#可靠性资源评估未达标主机)  {% endif %}  {{check\_reliability\_score.vm\_suggestion}}{% if check\_reliability\_score.vm\_list %}， [click to view for details](#可靠性资源评估未达标虚拟机)  {% endif %} | | Please go to the HCI platform and check [Reliable Services/Cluster Resource Scheduling/Scheduling Suggestions] to adjust resource scheduling for virtual machines with reliability issues. |
| {%tr else %} | | | | |
| Reliability Resource Rating | Intelligent recognition of scheduling benefits, execution of scheduling or provision of scheduling suggestions, resulting in positive business benefits and improved reliability after scheduling |  | |  |
| {%tr endif%} | | | | |
| Main preparation for disaster recovery | "Local Backup-Remote Disaster Recovery" scheme provides virtual machine level disaster recovery function for different RPO's (1 second to 1 week); local data center (main site) provides second level continuous data protection scheme. | **Whether the test platform uses the main backup for disaster recovery: currently test XX (standard / substandard)** | | When the customer's core business is interrupted, it will directly lead to economic losses, and it is necessary to ensure that the local city or machine room can still provide external business normally within minutes, thus deploying the main backup for disaster recovery |
| Double live disaster | From the four aspects of application, computing, storage and network, the PRO \ RTO is close to 0 | **Whether the test platform uses the main backup for disaster recovery: currently test XX (standard / substandard)** | | When the machine room level failure occurs, the whole business system will be paralyzed and unable to provide external services, resulting in economic losses for customers |
| Cross-board card double network port | The link of the same network plane is aggregated with different network card network ports to realize the network card level redundancy | Test whether the network plane of the platform carries different network cards: XX (standard / standard) | | When a network card failure directly causes the business interruption of the host |
| Double switch redundancy | The aggregation links of the same network plane respectively dock to different switches to realize switch-level redundancy | Test whether the network link of the platform has dual switch link: currently test XX (standard / substandard) | | When a switch fails, it directly disrupts the entire cluster |
| Anti-affinity, virtual machine scheduling strategy (running location) | Virtual machine scheduling policy supports mutually exclusive or aggregation strategy for multiple virtual machines and clusters. Through the scheduling strategy, the running position of virtual machines can be accurately controlled to meet the requirements of virtual machine service tuning. | Detects whether the virtual machine configured scheduling policies according to business attributes: currently detects XX (standard / substandard) | | 1. If the core virtual machine is running in the same main opportunity, the business system can quickly recover the host failure.  2. The virtual machine with frequent visits spans different hosts and leads to the forwarding through multiple physical channels, which is limited by the bottleneck of physical link |
| Regular backup function | Support virtual machine full backup and incremental backup, can achieve business data backup by day / week / month | To test whether the cluster is enabled for normal backup function: Currently, the normal backup function is on:  {{if\_open\_backup}} | | Failure to enable normal backup functions for continuity requirements at hours / days will lead to a rapid recovery to the service state of the day when a failure occurs |
| The CDP backup function | Support virtual machine second level backup, achieve key business number 0 lost | Check whether the cluster enables CDP backup function: the virtual machine is as follows:  {{if\_open\_CDP}} | | Failure to turn on CDP backup for services in seconds with continuity requirements results in only hour-level business data recovery when a failure occurs |
| With different backup location functions | Production data and the backup data exist in different storage volumes, ensuring the isolation of the backup data | Detect whether backup storage and production storage belong to different storage: the following VM backup and production have the same storage location:  {{check\_backupstorage  }} | | When the production data and the backup data are stored in the same storage volume, the disk failure of the volume may lead to the loss of both the production and backup data of the virtual machine. It is recommended to adjust the backup location as soon as possible |
| Snapshot mechanism | Record a copy of the virtual machine and apply to the data recovery of system patches, software updates causing system crash or service exception | Check whether the virtual machine retains the snapshot file for a long time: currently detect XX (standard / substandard) | | 1. If there is no snapshot in the system patch, software update and other scenarios of the virtual machine, the virtual machine will fail to quickly restore the normal business when the change fails  2. Long retention snapshots takes up storage space and pulls down virtual machine performance |
| high-performance | Disk ratio | The ratio of the data disk and cache disks of the virtual storage volume | **Check whether the disk ratio is 1:6 XX (standard / standard)** | | The value of data stripe is associated with the number of disks. If the data disk is below 6, the number of data slices will decrease, and the number of falling disks will decrease, eventually leading to the suboptimal performance |
| Storage capacity ratio | The capacity of the storage volume needs to be controlled within reasonable values to ensure that the performance does not decrease | Detection of storage capacity is below 80%: Details of current storage volume capacity are as follows:  {{volume\_ratio }} | | Using a capacity of more than 80% will lead to the slow IO response card of the entire storage volume and increase the delay. It is recommended to release space by expanding capacity or deleting unneeded data |
| Disk allocation | Dynamic allocation: Dynamic allocation of storage space according to the data usage situation Thin allocation: allocate storage space according to the actual data footprint.  Pre-allocation: Pre-allocate fixed storage space to improve disk performance but takes more storage space. | Check VM disk configuration policy for best practice: currently detect XX (standard / substandard) | | Disk allocation mode does not correspond to business requirements will lead to a waste of storage resources, and performance may be slow. The allocation mode of disk takes a long time, so it is recommended to complete it through storage migration. |
| Data balance | Data balance can ensure that the data can be distributed as evenly as possible in the storage volume. Through data balance, the space and performance of the new disk or host can be used in a timely and reasonable manner. | Check whether the platform opens the data balance function: currently testing XX (standard / substandard) | | Without opening data balance, the space of a disk / a host in the storage volume is close to 90%, while other disks still have available space, the resource use is uneven, and the performance card is slow |
| Storage policy | According to the environment, the system will automatically set the common storage policies, and support the user to customize the personalized storage policies, including the number of copies, intelligent layered QoS, the number of strips, and aggregated copies. | Check VM disk configuration policy for best practice: currently detect XX (standard / substandard) | | The performance gap between the default storage policy and the tuning storage policy is above 20%. If the targeted services with high performance requirements are not set for tuning, the service card may be slow |
| Internet forwarding exclusivity | When the business system runs on the hyperfusion, all the network traffic forwarding needs to rely on the network forwarding core of the physical server, including the traffic forwarding of the physical network port and the traffic forwarding between the virtual machines. | Check whether the forwarding resources of the platform are consistent with best practices: currently testing XX (standard / substandard) | | All traffic forwarding in the cluster needs to be network forwarding. If the reserved CPU resources are not enough to deal with the high concurrent traffic, the service card will be slow |
| Network plan | There are four network logic planes, each of which can be deployed independently, and uses physical links to carry the traffic without planes | Check whether the network configuration of the platform complies with best practices: currently testing XX (standard / substandard) | | Single / double exchange opportunity appears the network packet loss, the reliability is lower than the standard link aggregation  Other forms of load in the storage plane will cause the storage traffic not to be balanced on the two links, which will easily cause the bottleneck of slow performance card |
| High performance requirements virtual machine configuration recommendations (including configuration recommendations for different virtual machine requirements) | The CPU \ memory \ network \ storage of virtual machines will have performance and stable function settings of different dimensions. The actual virtual machine configuration should be optimal based on the customer's business situation | Check that the VM tuning policy matches best practices:  [Click to jump](#高性能虚拟机) | | The default virtual machine configuration and tuning performance gap is more than 25%. For targeted services with high performance requirements, no set tuning may cause the service card to be slow |
| Network port rate adaptation service needs | Business and VXLAN plane will increase the traffic as the business scale grows. When the actual link is gigabit, the customer business scale should be considered | Check whether the traffic of the platform reaches the physical bottleneck: currently test XX (standard / substandard) | | When the actual business traffic is close to the physical bandwidth bottleneck, the data IO falling disk will appear slow card, packet loss and other problems that affect the business experience |

Chapter 5 Deepen the proposal

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| --- | --- |
| Suggestions | Deepen suggestions |
|  |  |
|  |  |

Chapter 6 Legacy matters and the closed-loop

|  |  |  |
| --- | --- | --- |
| Remaining matters | Closed loop plan | person liable |
|  |  |  |
|  |  |  |
|  |  |  |

Chapter 7 appendix

## 7.1 Stable and reliable

### 7.1.1 High availability of HA

|  |
| --- |
| {%tr if check\_ha\_vms%} |
| The list of virtual machines with highly available HA function is not open. Check the check items and [click jump](#HA) |
| {{check\_ha\_vms.no\_ha\_vms.vms}} |
| Open the list of virtual machines with highly available HA function, view the check and [click jump](#HA) |
| {{check\_ha\_vms.ha\_vms.vms}} |
| HA value cash details, check the check item [click jump](#HA) |
| {{r check\_ha\_vms.worth\_realization\_details.value}} |
| {%tr else %} |
| No test results are available |
| {%tr endif%} |

### 7.1.2 Copy mechanism

|  |
| --- |
| {%tr if check\_vm\_replica%} |
| 2 copy and 3 copy of the virtual machine list, view the check item [click jump](#Copy) |
| {{check\_vm\_replica.replica\_config.vms}} |
| Copy mechanism value cash details, check the check item [click jump](#Copy) |
| {{r check\_vm\_replica.worth\_realization\_details.value}} |
| {%tr else %} |
| No test results are available |
| {%tr endif%} |

### 7.1.2 DRS

|  |
| --- |
| {%tr if check\_drs%} |
| List of virtual machines without DRS configured, view check item [click jump](#DRS_1) |
| {{check\_drs.unprotected\_vms\_reason.value}} |
| {%tr else %} |
| No test results are available |
| {%tr endif%} |

### 7.1.3 Effectiveness of the abnormal restart function

|  |
| --- |
| The list of abnormal restart virtual machines is not opened, view the check item and click jump |
| {{check\_abnormal\_recovery}} |

### 7.1.4 No latest patch is installed

|  |
| --- |
| The latest patch list is not installed, view the check item [click jump](#Quality) |
| {{r check\_patches\_worth}} |

### 7.1.5 slow disk detection

|  |
| --- |
| {%tr if check\_slow\_disk%} |
| Card slow disk detection mechanism value cash details, check the check item [click jump](#Laggingdisk1) |
| {{r check\_slow\_disk.worth\_realization\_details.value}} |
| {%tr else %} |
| No test results are available |
| {%tr endif%} |

### 7.1.6 List of non compliant hosts

[click jump](#可靠性资源评分)

|  |  |  |
| --- | --- | --- |
| Index | Host Name | Reliability Score |
| {%tr if check\_reliability\_score%} | | |
| {%tr if check\_reliability\_score.host\_list%} | | |
| {%tr for item in check\_reliability\_score.host\_list%} | | |
| {{loop.index}} | {{item.host\_name}} | {{item.reliability\_score}} |
| {%tr endfor%} | | |
| {%tr else %} | | |
| No test results are available | | |
| {%tr endif%} | | |
| {%tr endif%} | | |

### 7.1.7 List of non compliant vms

[click jump](#可靠性资源评分)

|  |  |  |
| --- | --- | --- |
| Index | virtual machine name | Reliability Score |
| {%tr if check\_reliability\_score%} | | |
| {%tr if check\_reliability\_score.vm\_list%} | | |
| {%tr for item in check\_reliability\_score.vm\_list%} | | |
| {{loop.index}} | {{item.vm\_name}} | {{item.reliability\_score}} |
| {%tr endfor%} | | |
| {%tr else %} | | |
| No test results are available | | |
| {%tr endif%} | | |
| {%tr endif%} | | |

## 7.2 Excellent performance

### 7.2.1 High-performance virtual machine

|  |
| --- |
| {%tr if check\_important\_vm%} |
| List of virtual machines meeting best practices, view check item [click jump](#Important) |
| {{r best\_practices\_vms}} |
| For a list of virtual machines that do not comply with best practices, [click jump](#Important) |
| {{r non\_best\_practices\_vms}} |
| Detection results of cluster virtual machines and master and standby virtual machines |
| {{r cluster\_check\_result}} |
| {%tr else %} |
| No test results are available |
| {%tr endif%} |

### 7.2.2 Virtual Machine details

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Virtual machine name | state | Disk IO time-delay status | | Whether the running host has a CPU downfrequency | Whether the running host CPU frequency is the highest | Whether the running host uses the swap | Whether the virtual machine CPU configuration is more than the physical host | For the virtual machine | other |
| {%tr if check\_important\_vm%} | | | | | | | | | |
| {%tr for item in check\_important\_vm%} | | | | | | | | | |
| {{item.vm\_name.value}} | {{item.status.value}} | {{item.disk\_sheet.value}} | {{item.low\_frequency.value}} | | {{item.cpu\_rate.value}} | {{item.swap.value}} | {{item.vcpu\_conf.value}} | {{item.vm\_snapshot.value}} | {{item.worth\_display.value}} |
| {%tr endfor%} | | | | | | | | | |
| {%tr endif%} | | | | | | | | | |