

Managed SAP Core Solutions

1 Managed SAP Basis Core Details

This section describes the common activities applicable to the configuration, monitoring and management of any Managed SAP Solution.

1.1 Technical Landscape Ownership

A primary function of the *Managed SAP Basis* service is to provide insight into the state of the platform. To achieve this, NTT shares with the Client actions, issues and information pertaining to the capacity and availability of their systems that are in scope in the SOW.

As part of the Service, NTT reviews quarterly EWA reports for each system to identify any issues that may not have been detected from routine SAP Basis use or monitoring. As well, NTT provides a quarterly report to the Client that includes a capacity and performance review of the platform based on inputs from EWA analysis and other monitoring and ticketing tools. The quarterly report also includes an analysis of risks and issues, improvement activities and recommended actions for all production systems (non-production systems are not included by default).

Once a solution has been transitioned to NTT management, the NTT Technical Landscape Owner is responsible for the following:

Task	Frequency	Description
Service Ownership	Daily	Oversight of the Service to ensure service quality through solution lifecycle management Ensure the service scope is aligned with the Statement of Work (SOW) Manage internal processes and maintain service-related documentation, which shall not be a Deliverable: <ul style="list-style-type: none"> . Alert response runbooks . Standard Service Requests . Periodic maintenance processes
Virtual Team Leadership	Daily	Act as team leader of the Technical Team, plan upcoming work and maintenance activities with Client
Risk Management	Quarterly	Report on early detection of capacity and availability risks, in coordination with the Technical Teams
Hierarchical Escalation Point	Daily	First escalation point for Client satisfaction and technical issues
Continual Service Improvement	Daily	Responsible for Continual Service Improvement (CSI) activities
Country Client Success Manager (CSM) Counterpart	Daily	Work closely with the in-country NTT CSM to provide input for service reporting (including but not limited CSI)
Disaster Recovery Plan (Only if DR is in scope per the SOW)	Annually	Assume ownership and management of the IT recovery process and plan, including: <ul style="list-style-type: none"> • Review and reconcile recovery plans • Schedule, attend, coordinate and conduct planned tests • Provide reports to the Client
Service Reporting	Quarterly	Work with the in-country CSM to provide analysis for SAP reports, including: <ul style="list-style-type: none"> • Recommendations based on EWA reports (EWA analysis is included) • Standard performance report • Capacity planning • Release management, based on product version availability and propose upgrades

Attending Client Meetings	Quarterly	Availability for service meetings with the Client to review reports or to discuss ongoing issues when necessary; attendance is remote (WebEx or audio call)
Review EWA reports	Quarterly	Review EWA reports generated in SAP Solution Manager

1.2 Routine SAP Basis System Administration

As part of the Service, NTT can provide Standard or Custom control of the SAP system based on Client requirements.

Standard Control Model: this model includes all the basis tasks required to maintain system health and is generally sufficient to meet the requirements of most solutions.

Custom Control Model: this model allows for additional activities to be added which may not be critical to system health, but which are still required for some solutions. *Custom Control* tasks must be defined as in Scope in the SOW and subject to additional charges.

NTT additionally provides support for Projects, which are separate activities that cannot be included as part of standard management due to complexity, duration or impact on the Service. These tasks are further described in the *SAP Projects section*.

1.3 Standard Model Tasks

The tasks which are included under the *Standard Control* model for ABAP, Java, Database, SAP Web Dispatcher, SOLMAN, SAP Router are listed in the following table.

Category	Task	Description
System Configuration	Transport Management System	. Configure the transport management systems and provide expertise in the configuration and troubleshooting of TMS . Configure automatic transport movement and auto-import functions between Client Non-Production environments . Validate that the systems are connected through TMS
	Email configuration	Enable outbound email delivery from SAP to OS relay
	Batch input	Adjust the number of background processes to maintain optimal processing time
	Work process administration	Manage work process, adjusting trace level and work process number
	RFC administration	Create, change or modify any RFC connection from SAP; transaction troubleshooting, reorganization .SAP Gateway administration
	TEMSE administration	Administration and reorganization of Temporary Database Objects database
	ICM administration	Configure Internet Connection Manager in any SAP Netweaver System
	General system configuration	Manage and maintain general configuration including: <ul style="list-style-type: none"> • Logon Groups • Operation Modes • Batch Groups • Server Groups
	Memory usage	Monitor memory usage and make adjustments as necessary to optimize performance and minimize application related memory consumption issues: <ul style="list-style-type: none"> • Memory and buffers for ABAP systems

		<ul style="list-style-type: none"> • Java memory consumption for JAVA system, including check J2EE exceptions
	Solution Manager	. Configure Solution Manager to generate a weekly report on production systems and provide a copy to the Client upon request
	SAP Cloud Connector	. Configure connection to SAP Backends, connectivity and links to systems so that Cloud Connector works properly
	SAP Analytics Cloud	.Update SAP Cloud Connector .Configure SAP Java Connector .Configure SAP Analytics Cloud Agent
	Printers	.Add/change/remove SAP printer configurations/device definitions based on Client or application requirements; limited to one hundred (100) printers . Enable/disable SAP print devices based on Client or application requirements
	SAP Internet Communication Framework	Maintain web services and nodes inside sicf transaction
System Operations	User administration	. Create Users . Assign/Remove Roles . Lock/Unlock Users . Reset Password
	Client administration	Configure client parameters, delete client, export client, etc.
	Start/Stop SAP services	SAP System, enqueue, JAVA Applications, database, system services
	Job administration	Standard SAP job administration and Business Job Failure notifications to Client, including Technical Job repository for S/4 HANA
	Spool administration	Reconfigure the spool processes to maintain optimal spool processing time; additionally, NTT will monitor the spool process for errors
	SAP update administration	Reconfigure the update processes to maintain optimal update processing time for updates
	Dialog process	Reconfigure the dialog processes to maintain optimal dialog processing time; additionally, NTT will monitor the dialog process for errors and validate that work processes aren't occupied for an extended period of time and are not stopped or in PRIV state
	Virtual Printer Server administration	Virtual Printer Servers administration to provide printer server redundancy and load distribution
	Implement SAP Basis Notes	Request to apply SAP Notes or Corrections to SAP Software . Complex notes (any which require manual changes) are Client responsibility

Manage SAP licenses	Install, delete, maintain SAP licenses
SAP user license audit	Audit users in SAP systems; NTT will execute the audit but is not responsible for the results
Solution Manager	<ul style="list-style-type: none"> . Define a new system in Solution Manager . Manage Solution Manager as frontend portal (SAP Java System)
Web Dispatcher	<ul style="list-style-type: none"> . Maintain SSL certificates . Configure and maintain parameters, including configuration of connections to SAP backends . Check performance . Install and configure SAP Web Dispatcher administration URLs
SAP Cloud Connector	<ul style="list-style-type: none"> . Maintain SSL certificates if is needed . User management inside the Cloud Connector tool . Start and stop the SAP Cloud Connector service/process; check startup parameters and ensure correct startup
SAP Analytics Cloud	<ul style="list-style-type: none"> . Maintain SSL certificates if is needed . Start and stop the SAP Analytics Cloud agent; check startup parameters and ensure correct startup
SAP Router	Configure and maintain SAP Marketplace connectivity, to include maintaining SAP router service, defining and maintaining saproutbap rules and checking SAPRouter connections
Review ABAP dumps	Monitor the system short dump log area for a high volume of entries over a short period of time (30 per hour) and Basis/database related failures
Local Client Copy	<p>Client shall provide NTT ten (10) business days' notice to ensure proper scheduling (change analysis and sizing)</p> <ul style="list-style-type: none"> . Internal SAP System client copies limited at two (2) per month
Remote Copy	<p>Client shall provide NTT ten (10) business days' notice to ensure proper scheduling (change analysis and sizing)</p> <ul style="list-style-type: none"> . One (1) remote client copy per system landscape per quarter . Lightweight copies, such as 'configuration only' can be addressed at two (2) per month per landscape
System Copy	<p>Client shall provide NTT ten (10) business days' notice to ensure proper scheduling (change analysis and sizing)</p> <p>One system copy per system landscape per quarter</p>
Transports	Import Transports into production up to twice per week
OS Spool Servers	Provide basic connectivity (ICMP, Telnet, SNMP) checks to verify that a printer can be contacted from print servers

	Execute SAP system traces and analyze	Execute any SAP system trace: .Security, RFC, SQL or performance trace
	Application Imports	Manual import of applications into SAP Java application server with SAP inst or SWPM. . Limited to two (2) per quarter per system landscape
Technical DB Management	Manage database parameters	. Adapt database parameters following SAP, vendor and NTT best practices . Administration of the SAP Database from database standard tools . Create secondary DB connections to other databases for access from SAP and install drivers in application servers . Database connections from JAVA to different databases using the default SAP connection or JDBC connectors
	Database users	Create SAP standard database users and monitoring users
	Manage database growth	. Extend database . Reorganize tables to increase performance or to recover space . Rebuild indexes . Database Reorganization (number of datafiles, move datafiles to another location, etc.) . Manage database compression
	Statistics and database performance	. Schedule and monitor database specific jobs such as statistics, updates and database checks . Update and maintain database statistics . Check database performance as a result of an Incident or monitored Event
	Restore database	Restore the database in case of an Incident in the source server
Installs/Updates/Upgrades	SAP Languages	Install and manage languages as requested during net-new implementations; NTT will perform up to (3) additional language packs post-go-live over the term of the contract

1.4

Custom Model Tasks

Tasks which can be included under the Custom Control Model for ABAP and Java are listed in the table below and may require additional charges.

During the SAP Service Design phase, discovery workshops or pre-sales phase, the Client and NTT must agree as to which, if any of the below activities, shall be included in the Service, in addition to those tasks listed in the Standard Model. Check Statement of Work for the inclusion of these tasks, roles and responsibilities of NTT and Client, and applicable charges, otherwise none of the below will be performed unless they are specifically identified as in scope in the SOW.

Category	Task	Description
Installs/Updates/Upgrades	Patch database software	Patch database software following database vendor and SAP requirements
	SAP Kernel Update	Updates to the SAP Kernel will be performed based on new release/patch availability, customer-specific compatibility and requirements, and NTT recommendations.

	System Updates	One of the following system updates is included per system landscape per year after the first year of contract: . Support Package Stack . Enhancement Pack Release and Support Package combined
Technical DB Management	Restore individual tables	Restore individual tables in case of data corruption or data loss; NTT will only follow processes supported by SAP. Client is responsible for integrity of data within the specified table(s) and for referential integrity between tables following restore and holds NTT harmless.

1.5 Solution Manager

Category	Task	Description
System Configuration	Configure SAP Solution Manager as a Project Server	Project Server roles include additional complexity and must be contracted separately
	Solution Manager additional features	The following Solution Manager features are not included in the Standard Model and must be contracted separately as part of the <i>Custom Model</i> : . Support Desk . ChaRM Management . Central User Management . Monitoring Tool . Data Volume Manager

1.6 SAP Projects

Projects are activities that can't be included in the *Custom Control* Model due to their complexity. All Projects must be quoted separately. Example Project activities include:

- (a) Adding or removing application services instances
- (b) Upgrading SAP Version
- (c) Upgrades and database release changes
- (d) Upgrade Solution Manager to a new release
- (e) Assist with external security audit if required, and provide information for auditors

1.7 SAP Functional Support

Functional support is not included in the Service. If it is required, NTT will provide a specific Application Managed Service for functional support.

The examples below, including but not limited to similar example tasks are not included and are out of scope.

Task	Description
Review source code related with ABAP dumps	When a dump is raised, and ABAP code needs to be analyzed
Export/Release Basis Transport request	Export transport request generated by NTT
Transport request administration	Search objects in transport request, reorganize transport request, edit transport request object list, manually create transport request and its contents
Reprocess and delete failed batch inputs	Reprocess failed batch inputs once the failure condition is solved

Reprocess failed IDOCS	Reprocess any failed IDOC once the failure condition is solved
Reprocess transactional RFC errors	NTT does not reprocess any transactional RFC errors for business-critical processes
SAP code development or modification	Any new development, standard SAP code modification or enhancement using ABAP code language or other programming language supported by SAP
Create and modify any SAP dictionary objects	Create and modify any SAP dictionary object related to new development, enhancement or SAP standard
Custom archiving process	Creation of new archiving, deletion and import program, or custom archiving objects based on Client dictionary
Functional tests after any SAP system modification	Define, create, document and execute functional tests related to SAP systems after any system modification, including review and testing SPAU and SPDD. SAP Basis Team will provide the list of objects to the Functional team, which then decides any further action
SAP custom code translations	Translate custom code to any language or modify standard SAP code translation
Management of SAP Cloud Platform components	Management of SuccessFactors or other SCP systems is not covered under this Service Description
Management of SAP Analytics Cloud	Creation or management of reporting, data modeling or any other task into SAP Analytics Cloud

1.8

Monitoring and Alerting

NTT SAP monitoring applies to different functional or monitoring groups along with specific monitoring details. These monitors are configured by default. The following are considered Client responsibility:

- (a) Provide NTT with a list of additional monitors required by the Client
- (b) Configure the warning thresholds in SAP or agree to thresholds established by NTT (thresholds are set in the SAP system and can therefore be configured by either the Client or NTT).

Our basic checks for SAP systems include:

- (a) Query appropriate logs for errors and issues
- (b) Monitor resource consumption for utilization of CPU, memory, storage, and swap space
- (c) Monitor SAP buffers and extended memory
- (d) Monitor systems for exceptions and failures (includes program failures as well as critical process activity)
- (e) Monitor systems at the application, database, and operating system layers for any type of lock situations, update issues, and excessive usage
- (f) Review transmissions and communications to and from SAP systems as part of the monitoring procedure
- (g) Recommend centralized monitoring methods, and if configured, monitor them.
- (h) Review EarlyWatch reports regularly
- (i) Monitor CCMS alerts
- (j) Monitor batch jobs on Client systems
- (k) Monitor systems logs for errors causing batch job failures
- (l) Monitor SAP Java processes
- (m) Monitor SAP control (part of SAP host agent)

- (n) Monitor SAP diagnostic agent activity

Additionally, the following database related checks are included as part of standard monitoring:

- (o) Ensure statistics jobs are scheduled and running successfully.
- (a) Ensure consistency checks are running and successful
- (b) Query for missing indexes.
- (c) Query database for lock and latch wait states
- (d) Query roll-back segments for maximum extents
- (e) Query database logs for errors
- (f) Query number of extents for each tablespace

1.9 Client Responsibilities

- (a) Request to apply SAP Notes or Corrections to SAP Software (functional notes)
- (b) All formatting and other troubleshooting related to Printer Management
- (c) Creation/modification/restarting of non-standard SAP background jobs
- (d) Single sign-on capabilities
- (e) Extensive configuration of Solutions Manager; Solution Manager can be configured to support a wide variety of functions such as service desk, functional configuration, testing and change management; the configuration and usage of these features are the responsibility of the Client
- (f) Managing and maintaining access management to the SAP Marketplace
- (g) Maintaining current support and maintenance to assure that download and support information continue to be accessible for NTT
- (h) All formatting and other troubleshooting related to OS Spool Servers

1.10 Out of Scope

- (a) Requests related to creating or assigning accounts are out of scope in this SLA unless otherwise stated in the Statement of Work.
- (b) Customized monitoring configurations not listed in this service description
- (c) SAP Fiori Client Lifecycle Maintenance - patching, upgrades and any maintenance related to SAP Fiori Client
- (d) SAP GUI Lifecycle Maintenance - patching, upgrades and any maintenance related to SAP GUI
- (e) BSI TAX Factory Release Upgrade (Software releases for BSI)
- (f) Vertex Tax Software Release Upgrade (software releases for Vertex)
- (g) SAP Functional Support as described in this service description
- (h) SAP Projects as described in this this service description