



Consolidated Technology Services • WA

State Data Center

VMAX Data Migration Guide

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Description of Change	Page or Section	Date Revised	Reviser
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Introduction and Purpose

The purpose of this Migration Guide is to define the steps that Consolidated Technology Services (CTS) and customer staff will take to complete readiness tasks necessary for the migration of systems to the State Data Center (SDC). It also contains the migration and post migration tasks needed to fully complete the migration effort.

This Guide documents the key activities to be coordinated by the customer's Agency Implementation Coordinator (AIC) in preparation for each system migration. These activities are summarized in a checklist that will be used to track completed activities and when complete signifies that the system is ready for migration scheduling. Completion of these activities is critical to migration success and will help to minimize any unplanned service disruption. The AIC serves as the primary customer contact and is responsible for coordinating the internal customer activities stated in the Guide.

When all tasks are complete the AIC will submit customer acceptance for cutover to the CTS Enterprise Projects Client Liaison asserting the customer's readiness to proceed with the migration. This may be provided in the form of a signed checklist or email confirmation. Upon receipt CTS' assigned Project Manager will review and either a) confirm readiness or b) return the checklist for further work. After readiness is confirmed by CTS, migration work and related activities will begin.

All system migrations are coordinated through an overall project schedule. A [Migration Calendar](#) has been published reflecting SDC migration activity.

Document Structure

As agencies progress through the Guide, they will see prerequisite tasks that:

- Must be completed internally by the customer agency
- Must be completed by CTS staff
- Must be completed in coordination with CTS

Each task is prefaced with a table entry that contains a column each for identifying the primary party responsible for completing the work activity, a task number and a relative description. The table below provides a brief sample:

Party	Task #	Task Description
Customer	1	Prerequisite task that must be completed by the customer agency
CTS	2	Prerequisite task that must be completed by CTS

Each table entry will be followed by a more detailed description of the work to be accomplished for that task. Migration tasks have been organized in a general chronological order.

Please Note: All migration tasks have been built to include a wide range of scenarios and not all tasks apply to every migration – these tasks will be clarified for each migration with the appropriate party during the planning phase.

Agency Implementation Coordinators will interface with the CTS Enterprise Projects Client Liaison to review any questions regarding this Guide.

Document Scope

The SDC migration projects that will impact customers have been organized into service areas to help CTS manage and communicate regarding the migrations. Three SDC migration projects are currently underway:

- **CTS Move Phase 1** - This project will focus on moving selected CTS equipment that best alleviates the heat issue in OB2. This phase will move the following primary areas:
 - Servers
 - Messaging
 - Security
 - Telecommunications
 - Network
 - Mainframes
- **Firewall** - This project will replace aged and over-capacity firewalls. It will also deliver enhanced data security services such as enterprise logging and event correlation, and intrusion detection/intrusion prevention.
- **VMAX Data Migrations** – This project will focus on migrating data from the old storage arrays in OB2 to the VMAX located in the SDC.

This Guide addresses **VMAX Data Migrations** and includes the following:

- Section 1: Server Data Migrations (including AI A Carte Customers)
- Section 2: Mainframe Data Migrations

The data being migrated in the VMAX Data Migration Project are managed by CTS Storage & Server Administrators, and / or Customer Administrator's. A majority of the tasks performed for these migrations will be performed by CTS in collaboration with the customer. Customer tasks will primarily include:

- Approving the schedule for the migration
- Approving new storage quotes
- Participating in the planning effort
- Freezing application and system changes prior to the move
- Verifying the system is performing as expected after the migration

Section 1 –Server Data Migrations

The following tasks apply to storage data migrations:

Migration Tasks

30 TO 60 DAYS BEFORE MIGRATION		
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CTS Client Liaison	1	Identify migration team including customer contact(s)
CTS Client Liaison	2	Schedule migration planning session(s)

The CTS Client Liaison must work with the CTS project manager and the AIC to identify the resources required migrating and validating the system. This “data migration team” will perform the migration and verification activities.

The CTS Client Liaison will facilitate meetings needed to plan and coordinate the migration.

CTS & Customer	3	On-boarding process
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This activity will provide the data migration team with the requirements and migration strategy needed for the data migration. At the end of this activity a quote will be produced for the customer, the quote must be approved before the data migrations can begin.

CTS & Customer	4	Perform EMC Grab for SAN connected servers
CTS & Customer	5	Update server per the EMC Grab recommendations (if applicable)

The EMC Grab must be run to identify any software or driver versions that are incompatible with the EMC storage solution used at CTS. Once the Grab is complete, staff will apply required software updates prior to the migration.

CTS & Customer	6	Monitoring & Performance Plan
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This activity will establish testing, monitoring, and reporting criteria. Before each data migration, the data migration team will:

- Review an document Test Plans
- Develop test schedules
- Establish initial performance baseline

CTS & Customer	7	Create Data Migration Plan and Back-out Plan
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A Migration Plan is needed to guide the migration effort. The Back-out Plan will be used in case a problem arises that cannot be resolved during the migration window. Escalation contacts and decision making timeframes will be identified as part of the Back-out Plan.

CTS & Customer	8	MEET: data migration planning session(s)
CTS & Customer	9	Agree upon migration date / time for move

CTS and the Customer will meet to review and refine high-level move, test, and back-out plans. A migration script will be used and customized, when necessary, to fit each application. This may require multiple meetings depending on the complexity of the migration.

The date and time (window) for migrating data must be coordinated with all impacted parties (CTS and the Customer). This becomes the target date of the move.

CTS	10	Submit change request for migration
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A change request must be submitted to CTS's internal change management system. This provides documentation required to migrate data.

7 TO 30 DAYS BEFORE MIGRATION

CTS Storage Admin	11	Provision VMAX Storage
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This activity will provision the storage on the VMAX as well as presenting the storage to the server environment.

CTS & customer	12	Verify server (system) backup
CTS & customer	13	Verify database (business data) backups

The server and database backup / recovery process needs to be exercised to verify that the backup is working and current. CTS will test this function as it could be needed in a recovery scenario.

1 TO 7 DAYS BEFORE MIGRATION

CTS & Customer	14	Verify the VMAX storage is ready to migration
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Before the data migration, pending updates must be applied to the servers. The CTS Server Admin will check for these and commit or remove them if applicable.

CTS & Customer	15	Freeze all changes (Application, Database, O/S, etc.)
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The system must be stable prior to the migration. All application, database and operating system changes should be frozen one week prior to the migration. This simplifies troubleshooting in the event problems occur (avoids potential causes). The Customer must lead this activity for components controlled by the Customer.

CTS & Customer	16	MEET: migration planning session
CTS & Customer	17	Confirm Migration Schedule and Plan (Go/No Go)

CTS and the Customer will meet to finalize the migration, test and back-out plans. This includes the migration script and is the final check-in prior to the migration day.

CTS will check-in with the Customer to verify, confirm and make final adjustments (if any) to the schedule and migration plan.

1 DAY BEFORE MIGRATION

CTS & Customer	18	Create full system backup
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A full system backup is needed just prior to the migration. This might be needed in case a problem occurs that requires a system recovery.

MIGRATION DAY

CTS & Customer	19	Assemble Migration Team
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The CTS Server Admin will assemble the migration team to start the process. This is the final go/no go point.

CTS Storage Admin	20	Send notification of the start of the Data Migration
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The CTS Server Admin will notify CTS staff and management the start of the data migration.

CTS Migration Team	21	PERFORM MIGRATION: Execute Data Migration Plan
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The data migration team will start the data migration process.

CTS & Customer	22	Perform system and application-level verification or initiate back-out
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Once the data has migrated to the SDC, the data migration team will perform system verification. This includes verifying the appropriate processes are running; network connectivity is working and executing other test scenarios. If issues occur that cannot be resolved within the negotiated migration window, CTS will notify the Customer that the Back-out Plan must be executed and the migration rescheduled.

Customer	23	Notify Customer that application-level validation is complete or initiate back out plan.
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Once the Customer has completed their system validation and check-out, they will notify CTS of the results of their testing. If successful, the Customer will approve the completion of the data migration by notifying the CTS Server Admin. If unacceptable or unsuccessful, the Customer will notify the CTS contact to execute the Back-out Plan.

CTS & Customer	24	Send notification of the end of the Data Migration
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The CTS Server Admin will notify CTS staff and management the end of the data migration.

POST MIGRATION

CTS	25	Generate post migration performance benchmarks
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CTS staff will monitor system performance up to one week after the data migration(s) and report any problems.

CTS & Customer	26	Verify that the VMAX is performing satisfactorily
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Not all problems will show up in the verification steps listed above. Once the system is under a workload, performance or other problems may show up. If this occurs, the Customer should immediately report the problem to the CTS Service Desk.

CTS staff will contact the Customer after the migration to verify the system is performing satisfactorily. If performance or other problems occur, a problem ticket will be reported to the CTS Service Desk.

CTS Service Owner	27	Adjust Billing
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The CTS Service owner will work with the Customer and the billing group to update any impacted billing processes.

CTS Storage Admin	28	Decommission the old storage
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Once the system is performing as expected after the migration, the old storage will be decommissioned.

Appendix A – VMAX Data Migration Checklist

Agency		Technical Lead	
Server Name			
MIGRATION TASKS FOR VIRTUAL SERVERS			
30 TO 60 DAYS BEFORE MIGRATION			
Party	Task #	Task Description	Complete?
CTS Client Liaison	1	Identify Migration Team including customer contact(s)	<input type="checkbox"/>
CTS Client Liaison	2	Schedule Migration Planning Session(s)	<input type="checkbox"/>
CTS & Customer	3	On-boarding process	<input type="checkbox"/>
CTS & Customer	4	Perform EMC Grab for SAN connected servers	
CTS & Customer	5	Update server per the EMC Grab recommendations (if applicable)	<input type="checkbox"/>
CTS & Customer	6	Monitoring and Performance Plan	<input type="checkbox"/>
CTS & Customer	7	Create Data Migration Plan and Back-out Plan	<input type="checkbox"/>
CTS & Customer	8	Create Migration and Back-out Plan	<input type="checkbox"/>
CTS & Customer	9	Agree upon migration date / time for move	<input type="checkbox"/>
CTS	10	Submit change request for migration	<input type="checkbox"/>
7 TO 30 DAYS BEFORE MIGRATION			
CTS Storage Admin	11	Provision VMAX Storage	<input type="checkbox"/>
CTS & Customer	12	Verify server (system) backup	<input type="checkbox"/>
CTS & Customer	13	Verify database (business data) backups	<input type="checkbox"/>
1 TO 7 DAYS BEFORE MIGRATION			
CTS & Customer	14	Verify the VMAX is ready to migrate	<input type="checkbox"/>
CTS & Customer	15	Freeze all changes (Application, Database, O/S, etc.)	<input type="checkbox"/>
CTS & Customer	16	MEET: Move planning session	<input type="checkbox"/>
CTS & Customer	17	Confirm Migration Schedule and Plan (Go/No Go)	<input type="checkbox"/>
ONE DAY BEFORE MIGRATION			
CTS & Customer	18	Create Full System Backup	<input type="checkbox"/>
MIGRATION DAY			
CTS & Customer	19	Assemble Migration Team	<input type="checkbox"/>
CTS Storage Admin	20	Send notification of the start of the Data Migration	<input type="checkbox"/>
CTS Migration Team	21	PERFORM MIGRATION: Execute Data Migration Plan/Script	<input type="checkbox"/>
CTS & Customer	22	Perform system and application-level verification or initiate back-out plan	<input type="checkbox"/>
Customer	23	Notify the Customer to begin validation or initiate back-out plans	<input type="checkbox"/>
CTS & Customer	24	Send notification of the end of the Data Migration	<input type="checkbox"/>
POST MIGRATION			
CTS	25	Generate post migration performance benchmarks	<input type="checkbox"/>
CTS & Customer	26	Verify that the VMAX is performing satisfactorily	<input type="checkbox"/>
CTS Service Owner	27	Adjust Billing	<input type="checkbox"/>
CTS Storage	28	Decommission the old storage	<input type="checkbox"/>

Admin			
AGENCY VALIDATION			
Agency:			
Name:			
Signature:			
Date:			