PROCEDURE OVERVIEW

The **CAPACITY MANAGEMENT PROCEDURE**, in essence, employs two roles, the proactive role, more commonly known as Capacity Planning, and the reactive role, driven by daily operational problems that create a need for rethinking capacity thresholds. In the attempt to reduce the latter, the **CAPACITY MANAGEMENT PROCEDURE** utilizes a forward-looking perspective to ensure that enhancements and new products have an environment that will meet SDLC.com service standards and contractual obligations. This environment includes hardware, operating systems, network connectivity and bandwidth, tools and utilities and application code. Also, although only the production environment issues are visible to clients, this procedure covers all environments: development, QA, FOA/Beta, staging and production.

Additionally, the **CAPACITY MANAGEMENT PROCEDURE** employs a reactive process when coping with events that arise. Although a negative event driving the **CAPACITY MANAGEMENT PROCEDURE** differs greatly from a preplanned environment as driven by a release, the procedure that is executed is the same.

The **CAPACITY MANAGEMENT PROCEDURE** attempts to reduce production issues caused by capacity problems by utilizing proper advance planning. This, in turn, reduces the need for ad-hoc **CAPACITY MANAGEMENT** as production problems decrease. With a well-defined and properly maintained procedure, capacity related production problems should be controlled and minimized.

Procedure Owner: Manager of Operations
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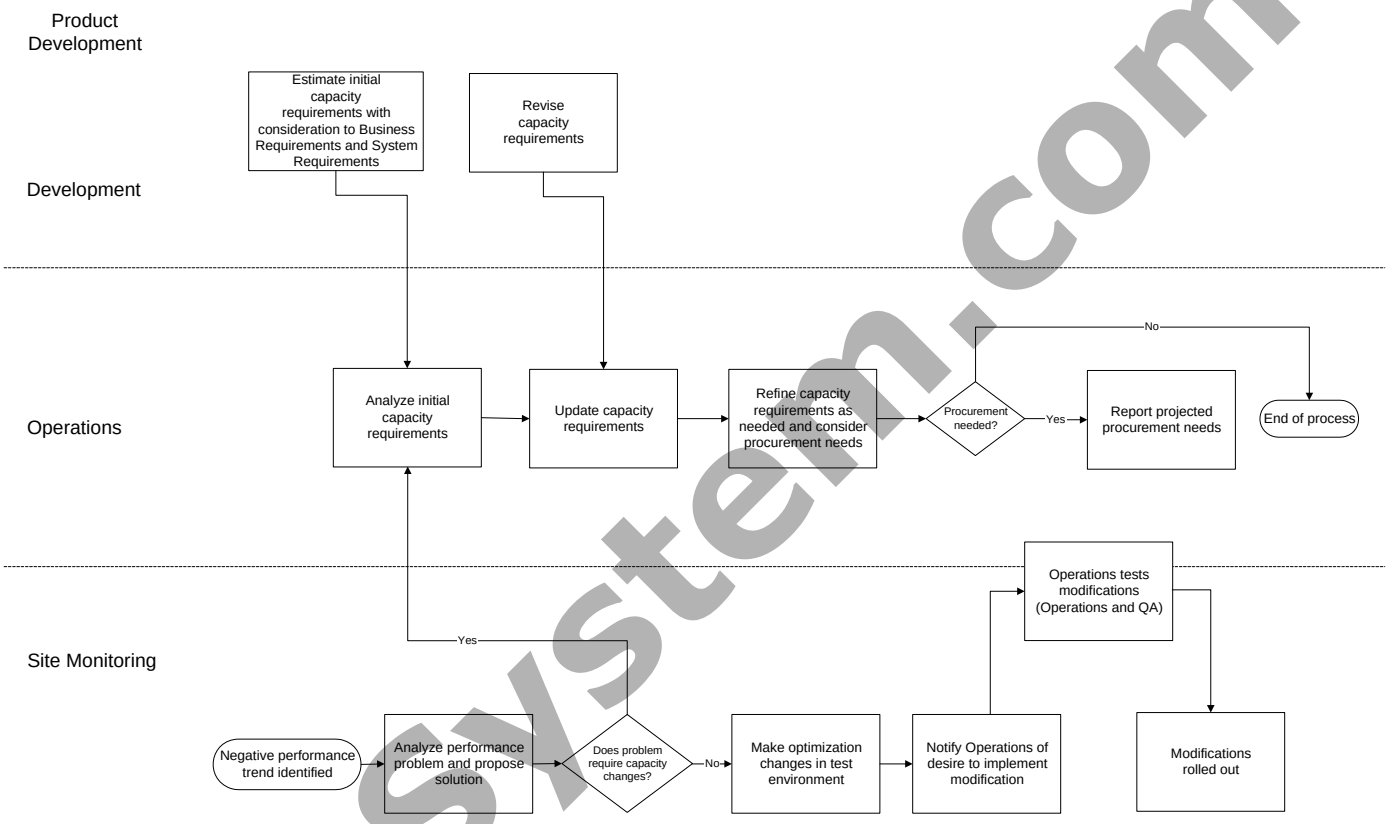
REVISION HISTORY

Version	Date	Author	Description

DISTRIBUTION LIST

Manager of Operations, Operations
System Architect, Strategic Development
Software Architect, Strategic Development
Release Engineer, Operations
VP Systems Architecture and Engineering, Engineering

PROCEDURE DIAGRAM



ROLES AND RESPONSIBILITIES

Contracting Organization

The ***Contracting Organization*** is the organization that contracts with the **Performing Organization** to develop a project/release. The ***Contracting Organization*** for all the releases at SDLC.com is mainly the ***Product Group***. Other ***Contracting Organizations*** include the ***Technical Support Group***, the ***Channel Marketing Group***, and the ***Engineering Group***.

The ***Contracting Organization*** is responsible for working with the ***Performing Organizations*** to appropriately complete the **Scope of Work (SOW)** documents as they relate to the **CONFIGURATION MANAGEMENT PROCEDURE.**

Performing Organization

The enterprise whose employees are most directly involved in enhancing the SDLC.com platform or system as defined by the ***Contracting Organization*** is the ***Performing Organization***. In the **CAPACITY MANAGEMENT PROCEDURE**, all ***Engineering*** departments will be considered ***Performing Organizations***.

Some of the expected deliverables of the ***Performing Organizations*** during this procedure are:

- Resource and cost estimates
- Advice on capacity requirements
- Resource plan
- Capacity plan

Service Organization

The organization that provides deployment support services to the ***Contracting Organization*** for all SDLC.com products is the ***Service Organization***. Services include deployment tools, software load support, problem resolution, phone support and deployment planning support.

Operations

Operations is the department of the ***Performing Organization*** that is responsible for the **CAPACITY MANAGEMENT PROCEDURE.**

Site Monitoring

Site Monitoring is the segment of the ***Performing Organization*** responsible for escalating capacity related production and performance issues to ***Operations.*** as they relate to the **CAPACITY MANAGEMENT PROCEDURE.**

Development

The ***Performing Organization*** that is mostly responsible for developing the application(s) of the release is ***Development.*** As it relates to the **CAPACITY MANAGEMENT PROCEDURE,** ***Development*** works with ***Operations*** to identify application needs that will affect capacity.

METRICS

To be discussed

PROCEDURE ACTIVITIES

Capacity Planning Requirements for a Release

Requirements Scope Lock-Down (Gate 10)

Business Objective: Approve the scope of work for which the organization will commit to develop requirements.

Owner: ***Project Manager***

Review Board: ***Program Sponsor, Project Manager, Contracting Organization(s), and Performing Organization(s)***

Initial High-Level Capacity Requirements

The heading 4 looks funny.
The ***Performing Organizations*** review the project scope as defined during the **RELEASE PLANNING PROCEDURE.** Working with the ***Contracting Organization***, the ***Performing Organizations*** (*who does this from Capacity Mgmt? Second meeting)* define high-level capacity requirements that consist of effort ? what are eforrt estimates time, cost resources ?? estimates, hardware, software and development requirements that are to be contained within the **Scope of Work (SOW)** documents. High-level estimates should take into account the anticipated number of simultaneous users, server capacity thresholds and acceptable peak simultaneous users.

Definition Phase Plan Approved (Gate 9)

Business Objective: Approve the Definition Phase Plan so that the project's business requirements (scope, timeframe and cost) are met.

Owner: ***Project Manager***

Review Board: ***Program Sponsor, Project Manager, Contracting Organization(s), and Performing Organization(s)***

Creating the Capacity Plan for the Definition Phase

(*who from Capacity Planning???)* works with (*who from configuration management)* to define the capacity requirements within the high-level configuration management plan. The Capacity Plan feeds the Definition Phase Plan developed by the ***Project Manager.*** The capacity requirements defined in this plan should include:

- Estimated number of users
- Simultaneous user capacity per server
- Number of servers
- Peak users supported, threshold percentage of peak

What else should feed into the capacity requirements?

Additionally, ***Operations*** must work with ***Development*** to identify any application code specifications that might impair or aid in capacity performance.

System Requirements Definition Approved (Gate 8)

Business Objective: Obtain approval of the system requirements definition(s) by the ***Contracting Organization(s).***

Owner: ***Project Manager***

Review Board: ***Project Manager, Contracting Organization(s), Performing Organization(s)***

Service Level Agreement Considerations

In order to develop a more refined capacity plan, ***Operations*** must refer to Service Level Agreements (SLA's) for any relevant considerations. Relevant considerations may include, but are not limited to:

- Client expectations of maximum load level
- Client expectations regarding disk space and processor speed
- Client expectations regarding bandwidth, availability, response time, and other factors that impact site responsiveness for users

Lock-Down Level Estimates Complete (Gate 7)

Business Objective: Complete the estimates and scope refinement necessary for Lock-Down.

Owner: ***Project Manager***

Review Board: ***Project Manager, Contracting Organization(s),*** Allocation function of the ***Performing Organization(s)***, Development function of the ***Performing Organization(s)***

Completing Estimates

Initial ***Operations*** capacity requirements estimates are made based on the **Scope of Work (SOW)** documents generated in the **RELEASE PLANNING PROCEDURE** and the **System Requirements** created in the **REQUIREMENTS DEFINITION PHASE** (Gate 8). More refined estimates must be completed prior to passing Gate 7 who does them?. These more refined capacity estimates must include the following:on a more detailed and thorough level:

- Estimate of risk level
- Time required to deliver work
- Resources required to deliver work
- Hardware, software, network and bandwidth requirements
- Cost associated with the environment
- QA, FOA/Beta and Staging Environment capacity specifications
- Specification for stress testing during the **QUALITY FUNCTION PROCEDURE**

These estimates are forwarded to the ***Project Manager*** to include in the **Project Plan**, if necessary.

Lastly, procurement needs are considered and the **PROCUREMENT PROCEDURE** is executed if purchasing of assets and/or services is required.

Project Lock-Down (Gate 6)

Business Objective: Obtain commitment from the ***Performing Organization(s)*** and the ***Contracting Organization(s)*** for the delivery of a defined project scope of work within a defined timeframe.

Owner: ***Project Manager***

Review Board: ***Project Sponsor***, ***Project Manager, Contracting Organization(s), Service Organization***

Creating the Final Capacity Management Plan for Lock-Down

Operations, by working with the individuals within the ***Configuration Management*** group**,** will identify final hardware requirements, hardware and software configurations necessary and the execution plan intended. This information will feed the final **CONFIGURATION MANAGEMENT** plan as well as the final **CAPACITY MANAGEMENT** plan. These plans will be presented to the ***Project Manager.*** This information will then be contained in the release project plan for project management purposes.

Detailed Plans Complete (Gate 5)

Business Objective: Obtain approval of the detailed project plan and commitment of appropriate resources to execute the plan.

Owner: ***Project Manager***

Review Board: ***Project Sponsor***, ***Project Manager, Performing Organization(s)***

Preparing for the Development Test Environment

After Project Lock-Down has taken place, ***Operations*** can begin working on preparing the development test environment. In order to do so, ***Operations*** will utilize the **CAPACITY MANAGEMENT** data developed in the prior gate. The development test environment will be used later for stress testing to analyze recommended capacity requirements. This is new to all I heard so far. Development Stress Test? What does the information below have to do with Capacity?

Stress Test usually does not occur on the development environment – it usually happens on QA or staging environments
The development test environment must contain the following:

- Development test databases
- Version control procedures

- Clearcase/Version Object Base (VOB) for the release
- Build schedule

Begin System Certification (Gate 3)

Business Objective: Approve release of the product to System Certification Testing.

Owner: ***Contracting Organization(s)***

Review Board: ***Project Manager, Contracting Organization(s),*** System Certification function of the ***Contracting Organization(s),*** Validation function of the ***Performing Organization(s)***

Stress Testing

Stress testing takes place within Gate 2 and Gate 3. The stress testing that will take place will either validate or call into question the initial capacity requirements defined. In order to properly stress test the environment, the **CAPACITY MANAGEMENT** data in the **CONFIGURATON MANAGEMENT** plan must include:

- Number of simultaneous users to simulate
- Capacity threshold
- Type of actions that should be performed

If the stress testing uncovers an issue with the capacity of the environment, ***Operations*** must return to analyzing the environment and create a more refined **CONFIGURATON MANAGEMENT** plan. based on the capacity mangement lessons learned from the stress testing.

Once stress testing has identified that the environment is suitable for the expected capacity, ***Operations*** notifies ***Site Monitoring*** of the thresholds for reporting exceptions.

Begin First Office Application (FOA) (Gate 2)

Business Objective: Approve release of the product for first office application.

Owner: ***Contracting Organization(s)***

Review Board: ***Project Sponsor***, ***Project Manager, Contracting Organization(s),*** System Certification function of the ***Contracting Organization(s), Performing Organization(s),*** Validation function of the ***Performing Organization(s), Service Organization***

Capacity Monitoring for the First Office Application (FOA)

In this gate, the **CAPACITY MANAGEMENT** group will simply work with ***Site Monitoring*** to ensure that the FOA is rolled out smoothly, based on the thresholds obtained during the stress test. If issues arise, ***Site Monitoring*** will notify ***Operations*** of potential capacity problems for **CAPACITY MANAGEMENT** through the ***Configuration Management*** team.

Begin Controlled Rollout (optional) (Gate1)

Business Objective: Approve the release of the product for controlled rollout (CRO). This gate is only required when a CRO is planned as an integral phase of the project.

Owner: ***Contracting Organization(s)***

Review Board: ***Project Sponsor***, ***Project Manager, Contracting Organization(s), Performing Organization(s), Service Organization***

Capacity Monitoring for the Controlled Rollout

In this gate, the **CAPACITY MANAGEMENT** group will work with ***Configuration Management*** and ***Site Monitoring*** to ensure that the controlled rollout performs smoothly, based on the thresholds obtained during the stress and FOA. If issues arise, ***Site Monitoring*** will notify ***Operations*** of potential capacity problems for **CAPACITY MANAGEMENT** refinement through the ***Configuration Management*** team.

General Availability (Gate 0)

Business Objective: Approve the release of the product for general availability.

Owner: ***Contracting Organization(s)***

Review Board: ***Project Sponsor***, ***Project Manager, Contracting Organization(s), Performing Organization(s), Service Organization***

Capacity Monitoring for General Availability

In this gate, the **CAPACITY MANAGEMENT** will work with ***Configuration Management*** and ***Site Monitoring*** to ensure that general availability rolls out smoothly, based on the thresholds obtained during the stress test, FOA and controlled rollout. If issues arise, ***Site Monitoring*** will notify ***Operations*** of potential capacity problems for **CAPACITY MANAGEMENT** through the ***Configuration Management*** team.

Capacity Planning Requirements for Expected Site Spikes

Certain events may invite an increase in simultaneous users. If these events are known in advance, the **CAPACITY MANAGEMENT** can be executed in order to properly plan for these events. In these cases, **CAPACITY MANAGEMENT** is the same as that for a release with one exception; there are no gates that must be passed. At a minimum, ***Operations*** should be notified two weeks prior to the expected event. The following events should be supervised for increases in capacity:

- Site advertisements
- New partner considerations

Should anything else be monitored for site spikes? Second meeting. What about Unexpected spikes?

Capacity Management for On-Going Operations - Reactive Capacity Management

The reactive **CAPACITY MANAGEMENT** group must be executed in the same manner as stated above (how do you execute a group?). This procedure will be executed when an operational issue arises. Upon notification from ***Site Monitoring*** of a production issue, ***Operations*** analyzes the issue. If the issue is capacity related, ***Operations*** follows the procedure as stated above with the exception of the gates. Gates will not be invoked when evaluating capacity needs that are not related to a release.

FORMS

- None identified at this time.

EXCEPTIONS

- None identified at this time.

AFFECTED/RELATED PROCEDURES

- Configuration Management Procedure
- Asset Management Procedure
- Procurement Procedure
- Site Monitoring and Problem Management Procedure
- Release Planning Procedure
- Requirements Definition Procedure
- Detailed Design Procedure
- Development Procedure
- Quality Function Procedure

TOOLS/SOFTWARE/TECHNOLOGY USED

- None identified at this time.