

Requesting Membership in the XSEDE Federation

10 July 2014

Version 2.0

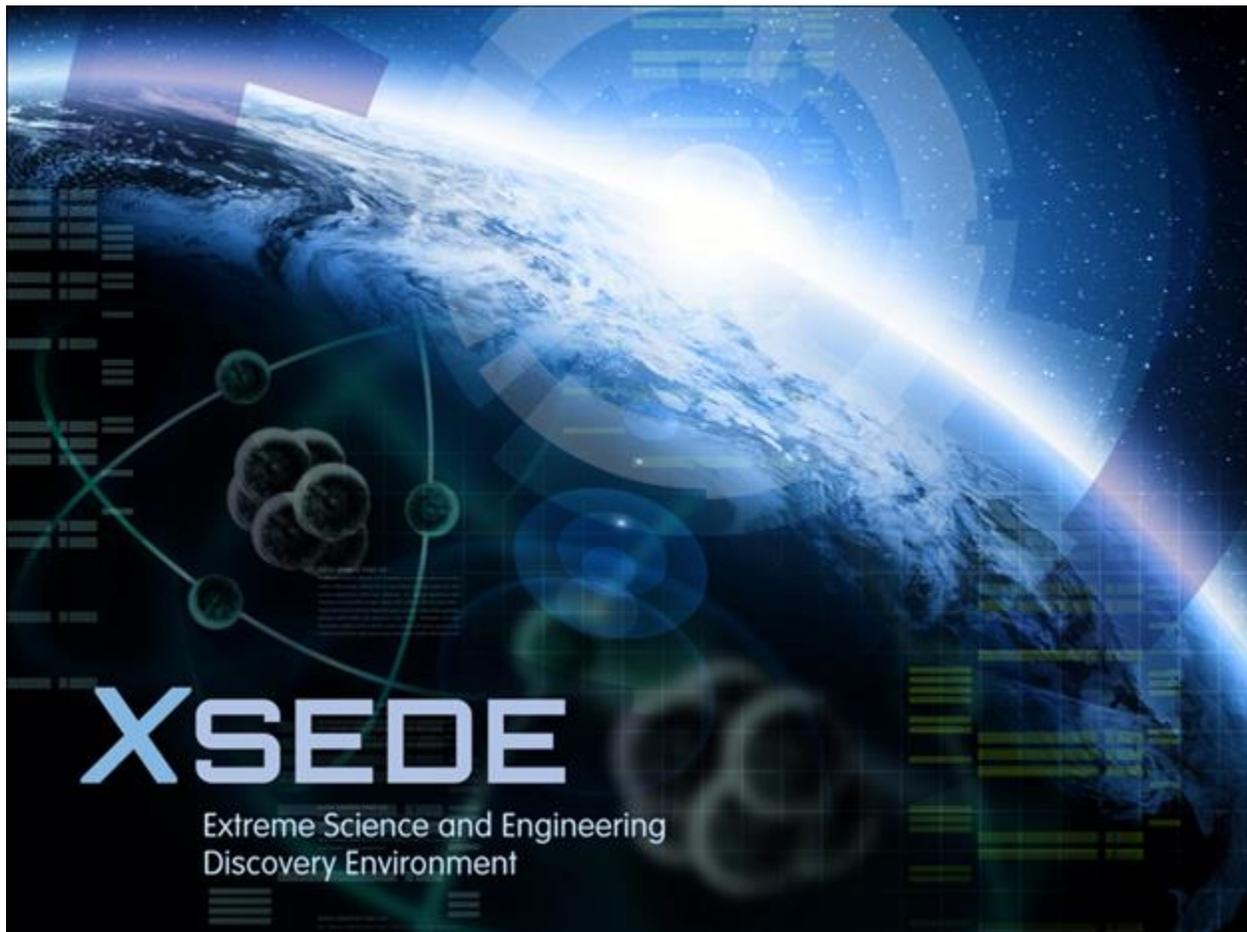


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A. Document History

Relevant Sections	Version	Date	Changes	Author
Entire Document	1.00	29 Mar 2012	Baseline	XSEDE
B and C	1.10	03 Apr 2012	Corrected typos and added correct URLs	John Towns
B	1.20	19 Apr 2012	Rearranged text for better flow, minor corrections	Jay Boisseau, John Towns
B.3, C	1.21	20 June 2012	Drafted language for SPs to describe benefits to SP and XSEDE from their participation.	John Towns
B.3, C	1.22	10 July 2012	Incorporated fixes to typos/grammar and accepted all changes.	John Towns
	1.30	14 Mar 2014	Initial pass to disambiguate content in the SPF Charter document and this document. Also generalizing beyond SPs as members of the XSEDE Federation	John Towns
	1.34	27 Apr 2014	Further edits in clarifying SPF and XF. Moved criteria for membership from SPF document to Sec G here.	Richard Loft, Richard Moore, Gregory Peterson, John Towns
	1.40	5 May 2014	Cleanup and minor edits	John Towns
	1.41	28 May 2014	Incorporating SP Forum feedback	Richard Moore
	1.42	13 June 2014	Eliminate reference to SP Forum associate member. Minor edits.	Richard Moore
All	1.43	26 June 2014	Some reordering for clarity and finding information; fixed section references; fixed URLs; minor edits	John Towns
Multiple	1.44	2 July 2014	Cleaned up references to SP Forum and SPs	Richard Moore

Multiple	1.45	7 July 2014	Cleaned up edits accepted most changes except most recent.	John Towns
Multiple	2.00	10 July 2014	Accepted tracked changes and cleaned up following acceptance by the SMT	John Towns

B. XSEDE Federation

The extended organization created by the amalgamation of the XSEDE program and other separately funded bodies with which XSEDE collaborates or otherwise has a formal relationship with is referred to as the *XSEDE Federation*. This includes many Service Providers that are autonomous entities from the XSEDE project but agree to coordinate/integrate with XSEDE as members of the XSEDE Federation. The XSEDE Federation includes (among others) those providers and consumers of services which will meet, to varying degrees, the requirements of interfaces with XSEDE and also will engage in the effective and sustained interactions required to develop and evolve those interfaces. All formal relationships with XSEDE will be documented via agreements that must cover a wide spectrum in both the services and responsibilities involved. Many of these agreements will be specific to the particular partner. Partner organizations within the XSEDE Federation extend beyond the Service Provider designation; in particular, XSEDE interacts with peer organizations within the United States and internationally (e.g., PRACE). In addition, XSEDE commits to collaborate on various independent proposals submitted to various agencies and those projects are also members of the XSEDE Federation. This document addresses how potential partners request membership in the XSEDE Federation.

B.1. Non-Service Providers in the XSEDE Federation

As described in the introduction, the XSEDE Federation includes any other separately funded bodies with which XSEDE collaborates or otherwise has a formal relationship. This is not limited to Service Providers, and includes other peer organizations such as PRACE or organizations with joint proposals/projects with the XSEDE project. Since each of these relationships will be unique, there are no prescribed criteria for membership such as for Service Providers. Potential partners that are not Service Providers but that are interested in collaborating with XSEDE and joining the XSEDE Federation should contact the XSEDE Principal Investigator for additional information.

B.2. Service Providers in the XSEDE Federation

Service Providers (SPs) are organizations that provide cyberinfrastructure services to the science and engineering community. They may meet the XSEDE Federation membership criteria and wish to request membership in the XSEDE Federation for various reasons. This document describes the process for making such a request.

The overarching goal of the XSEDE Federation with respect to service providers is to encourage service providers to bring new and innovative services to XSEDE while not being overly burdensome with respect to process and requirements. Clearly defined service levels and an operational framework for partnering relationships will encourage broader participation, expand the services available to the community, and form the underpinnings of a pervasive national cyberinfrastructure ecosystem.

Service Providers that are part of the Federation may be involved in a variety of ways. For example some NSF awards (e.g., Track 2, RDAV, DCL) mandate that awardees make their services available through XSEDE at the highest level of integration. However, some institutions may want to voluntarily make their services (e.g., large campus clusters, data repositories) available via XSEDE without being mandated by NSF to do so, and they may prefer to meet all or only some of the requirements (e.g., perhaps only a shared network link versus dedicated 10 Gbps connectivity). This section describes a

flexible construct for SP participation in the XSEDE Federation with various levels of requirements and integration. This flexibility lays the foundation for broader participation in the Federation of campus, regional, and other cyberinfrastructure efforts in NSF's national cyberinfrastructure.

Service Providers may be funded by autonomous NSF awards, other funding agencies, or local campuses to provide their services to their community. It is the autonomous nature of the funding to Service Providers which demands a careful description of the relationship between the XSEDE project and SPs that are part of the XSEDE Federation.

(Note that several organizations are Service Providers and are also participants in the XSEDE award; their role as a Service Provider is considered here separately from their direct role in the XSEDE program.)

B.3. Levels of Service Providers in the XSEDE Federation

Three Levels¹ of Service Providers within the XSEDE Federation are defined. Of central importance is that all SPs who are members of the XSEDE Federation have an explicit voice in how the XSEDE project and its environment and architecture evolve to further support the needs of all stakeholders. SPs are classified as being at a specific Level by meeting a minimum set of conditions. They may meet additional conditions at their option, but classification at a specific Level will be based on the stated required minimum conditions. "Level 1" Service Providers meet all XSEDE integration requirements and will explicitly share digital services with the broader community of researchers supported by the XSEDE environment and infrastructure, with access to those digital services made available through the XSEDE Resource Allocation Committee (XRAC) process. "Level 2" Service Providers make one or more digital services accessible via XSEDE services and interfaces, share one or more digital services with the XSEDE community along with the organization's local users, and meet a subset of the requirements for Level 1 Providers. Level 2 SPs have exposure to a broader audience, can leverage significant XSEDE-provided infrastructure and services in meeting their objectives, and have the option of using the XSEDE allocation process to provide access to the digital services they provide. "Level 3" Service Providers are the most loosely coupled within the XSEDE Federation; they will advertise the characteristics of one or more digital services via XSEDE mechanisms, might make those resources or services accessible via XSEDE compatible interfaces but need not make digital services available "locally" via XSEDE services or interfaces, and are not required to share services with the XSEDE user community. Level 3 SPs are an important way for making the community aware of the rich resources that exist beyond the formal structure of the XSEDE program and the services provided by the Level 1 and 2 SPs, and providing a means for much broader input into the XSEDE governance process.

Table 1 provides a high-level summary of the technical requirements and mutual expectations of XSEDE Federation SPs and XSEDE at the three Levels. A complete description of these requirements and expectations, as well as procedures for Service Providers to meet these requirements, has been developed by the XSEDE program team in at [https://www.xsede.org/project-documents-under-the-heading "Production Environment and Operations Documents."](https://www.xsede.org/project-documents-under-the-heading-Production-Environment-and-Operations-Documents)

¹ Throughout this document, the word "Level" is spelled with an initial-capital when it refers to Levels of Service Providers within the SP Forum, and without an initial-capital when it does not refer to this specific context.

Table 1: Summary of Requirements and Expectations for XSEDE and XSEDE Federation SPs

	SP Level		
	Level 1	Level 2	Level 3
Expectations of XSEDE by XSEDE Federation Service Providers			
Technical Expectations			
XSEDE will publish information on the digital service/resource via XSEDE Information Services	Yes	Yes	Yes
XSEDE will provide the SP opportunities to participate in training, workshop, and conference activities	Yes	Yes	Yes
XSEDE will monitor XSEDE-compatible services by XSEDE Operations	Yes	Yes	No
XSEDE will provide for allocation of the service via the XSEDE Resource Allocation Committee (XRAC) process	Yes	Optional	No
XSEDE will provide access to XSEDEnet to the SP	10Gb/s	Optional	No
XSEDE will provide XSEDE Accounting/Account Management Services to the SP	Yes	Yes	No
Support			
XSEDE will provide support for XSEDE client and server software (XSS) installed at the SP	Yes	Yes	No
XSEDE will provide SP access to the XSEDE Ticket System	Yes	Yes	No
XSEDE will work with the SP to provide User Support for provided digital service	Yes	No	No
XSEDE will route incoming tickets to SP via XSEDE Ticket System	Yes	Yes	No
Coordination between XSEDE and SP training, education, and outreach goals	Yes	Optional	No

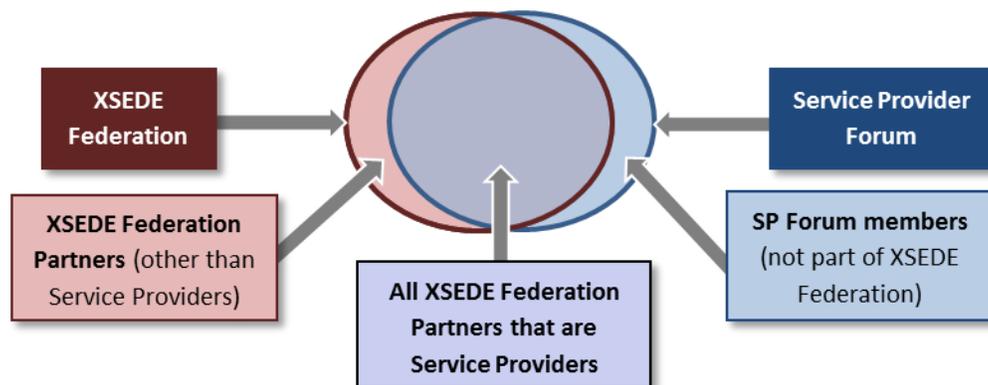
	SP Level		
	Level 1	Level 2	Level 3
Expectations of XSEDE Federation Service Providers by XSEDE			
Technical Expectations			
SP will provide and maintain digital service/resource info in XSEDE Information Services	Yes	Yes	Yes
SP will provide documentation and training materials for XSEDE compatible services offered	Yes	Yes	Optional
SP will provide training and workshops to XSEDE user community	Yes	Optional	Optional
SP will attend the annual XSEDE conference	Yes	Yes	Optional
SP will provide access to XSEDE-compatible digital service/resource for monitoring by XSEDE Operations	Yes	Yes	No
SP will make a significant portion of the service/resource available for allocation via the XSEDE Resource Allocation Committee (XRAC) process	Yes	Optional	No
SP will provide XSEDEnet connectivity to its users	Dedicated 10Gb/s	Optional	No
SP will participate in XSEDE Accounting/Account Management Services	Yes	Yes	No
SP will actively participate in XSEDE Operations as appropriate for the service, including providing the necessary information, human resources, and technology to comply with XSEDE security, accounting, allocation, user support, and other services	Yes	Yes	No
Support			
SP will install and maintain appropriate XSEDE Software and Services (XSS). (Documentation of the XSS is currently defined in the <i>XSEDE SP Software and Services Baseline</i> and the <i>XSEDE Technical Security Baseline noted above</i>)	Yes	Partial	No
SP will route higher-level XSEDE tickets to XSEDE via XSEDE Ticket System	Yes	Yes	No
SP will provide User Support for provided digital service	Yes	Optional	No
Coordination between XSEDE and SP training, education and outreach goals	Yes	Optional	No

A Level 1 or Level 2 Service Provider in the XSEDE Federation is generally associated with an *award or funding agreement*, representing specific services and/or resources to be provided, while a Level 3 Service Provider in the XSEDE Federation is generally associated with an organization on a campus that provides local resources. For example, even though *Kraken*, *Nautilus*, and *Keeneland* were all resources co-located and operated by staff at NICS, there were three distinct NSF awards associated with these resources, and thus there were three different SPs associated with those resources. Alternatively, though *Ranger*, *Spur*, and *Ranch* were distinct digital services at TACC, they were all supported as part of a single award and thus were considered a single SP. At all Levels, it is possible for a Service Provider to operate multiple resources/services within their single SP designation. An institution that wants to be an L1 or L2 SP and has multiple awards or distinct funding sources associated with distinct services, can request to be considered a single SP. For example, if a university wanted to bring both a campus-funded service and a distinct NSF-funded resource to the XSEDE Federation, by default these would be considered distinct SPs, but the institution could request that these services be considered part of a single SP. The default position for Level 3 Service Providers is that all services/resources operated at the organization are part of a single Service Provider. Any conflict with respect to the connection between an award, the provided service, and the state of being an SP in the XSEDE Federation may be resolved through discussions with the XSEDE Project Director.

B.4. The Service Provider Forum and Relationship to XSEDE Federation

The Service Provider Forum (SP Forum) is an autonomous body that provides a forum for Service Providers to discuss issues of common interest and that provides the governance mechanism for Service Providers within the XSEDE Federation to interact with the XSEDE project.

The figure below is a Venn diagram illustrating the relationship between the XSEDE Federation and the SP Forum. *All Service Providers that are members of the XSEDE Federation are automatically members of the Service Provider Forum.* There are members of the XSEDE Federation that are not Service Providers (e.g. PRACE), and Service Providers may be members of the SP Forum without joining the XSEDE Federation.



Information about the SP Forum is available at <https://www.xsede.org/web/sp-forum> and the formal document *Service Provider Forum: Charter, Membership, and Governance* is available at <https://www.xsede.org/project-documents>. All Service Providers interested in joining the XSEDE Federation and/or the SP Forum should review both this XSEDE Federation document and the SP Forum document together. (There is intentional redundancy between these two related documents so that each of them constitutes a standalone document and yet they are consistent in areas of overlap.)

The SP Forum is independently chartered to serve multiple purposes. While it has been established to engage a broad community of SPs, it is also the defined means for interaction between the XSEDE program and the SPs that are members of the XSEDE Federation. In its latter role, the governance of the SP Forum – e.g., voting rights and representation – is dependent on the Levels of participation in the XSEDE Federation. See the referenced documents for additional information on SP Forum governance.

B.5. Service Provider Membership in the XSEDE Federation and the Service Provider Forum

A potential Service Provider interested in joining the XSEDE Federation should first review this document, the SP Forum web site (<https://www.xsede.org/web/sp-forum>), and the *Service Provider Forum: Charter, Membership, and Governance* available at <https://www.xsede.org/project-documents>. The prospective XSEDE Federation member should then contact the XSEDE Project Director, John Towns, to discuss their interest and evaluate the potential Level of participation in the XSEDE Federation. (If the prospective member is interested in joining the SP Forum but not the XSEDE Federation, please see the documents above and contact the SP Forum Chair at spf-chair@xsede.org.)

A written letter-of-intent to join the XSEDE Federation should be submitted electronically to the XSEDE PI and must contain the information regarding the prospective SP's organization and activities as outlined in the sample Letter of Intent below (Section C). Upon receipt of the letter, the XSEDE PI will then review the request with the XSEDE Senior Management Team, including the Chair of the SP Forum. (It is expected that NSF will also review the agreements for all Level 1 SPs.) Following review of the request, the XSEDE Project Director will provide a response letter indicating the result of the considerations of the XSEDE Senior Management Team. In the case of approval, the letter will express XSEDE's understanding of its obligations to the new XSEDE SP and commitment to fulfill those obligations. In the case of declination of the request, the response letter will explain the reasoning for the declination. When a decision is made to approve the application and appropriate Level of membership in the XSEDE Federation, the XSEDE Project Director will notify the applicant and the Chair of the SP Forum, and the applicant will simultaneously become a member of the Service Provider Forum, as well as the XSEDE Federation.

If a Service Provider needs to change their Level in the XSEDE Federation (e.g., a resource is being decommissioned or no longer available via XSEDE) or wishes to no longer participate in the XSEDE Federation, they are strongly encouraged to contact the XSEDE Project Director and voluntarily initiate this change in status. Please see Section E for information on how to request a change in status.

Governance of the XSEDE Federation

The XSEDE Federation is the amalgamation of individual documented relationships between various bodies and the XSEDE program. As such, a governance structure is not required for the XSEDE

Federation as a whole. However as discussed above, the governance for the Service Providers within the XSEDE Federation is handled within the Service Provider Forum, as prescribed in the Charter document for that organization.

C. Sample Letter of Intent for Service Provider Membership in the XSEDE Federation and the Service Provider Forum

Dear John,

[name of organization] wishes to participate in the XSEDE Federation and the Service Provider Forum as a Level N [1,2,3?] Service Provider (SP) through its delivery of [service descriptions].

[Provide a general description of the resource(s)/service(s) being offered and the community to which it is being offered.]

[Provide an explanation of the basis for requesting membership at Level 1, 2 or 3; please see Section D – Criteria for XSEDE Federation Membership Applications.]

[Provide a summary statement as to how the service(s)/resource(s) is(are) augmented by involvement in XSEDE and also how XSEDE is augmented by their involvement – in both cases these should be tied to science impact. Please see Section 11D – Criteria for XSEDE Federation Membership Applications.]

We have reviewed the *Requesting Membership in the XSEDE Federation* and the *Service Provider Forum: Charter, Membership, and Governance* documents ⁽²⁾ defining the nature of these organizations and the mutual responsibilities of XSEDE and an SP and are confident that we can and will fulfill our obligations as described therein.

In the event that you have an issue with our performance, please contact me directly. Similarly, if we perceive an issue, we will contact you. In either case we commit to work with you to resolve any issues.

We at [name of organization] look forward to working with XSEDE to advance the mission of XSEDE and the NSF in advancing the nation's research capability.

Sincerely,

[Applicant]

Appendix: Please provide the following specific information

- a. Name of organization/award
- b. Organization's affiliation (if any) with an academic or government institution
- c. Location of organization, including full postal address
- d. URL for organization's web site

² Latest version can be found linked from <https://www.xsede.org/project-documents>

- e. Lead person at organization and at least one alternate (Include name, postal address, email address, telephone, and fax).
- f. Specify what Level of SP is requested and how the applicant meets the required conditions of being a Level 1, 2 or 3 SP.
- g. If an approved application would result in aggregating more than one SP at an institution, a description of the distinctions in funding sources, operations, and user communities between the multiple SPs at the institution and rationale for aggregation.

D. Criteria for Service Provider Applications to the XSEDE Federation

This section describes the criteria used in evaluating prospective Service Provider requests to participate in the XSEDE Federation at the various Levels of participation.

The request should specify how the interested Service Provider meets the required conditions of being a Level 1, 2, or 3 SP. SPs may choose to support characteristics from higher Levels, but an SP may only qualify for a given Level when all of the minimum requirements for that Level are satisfied. These conditions are:

- a. An SP may be classified as Level 1 in the following ways:
 - 1. NSF Mandate: NSF may mandate to that an SP is to be an XSEDE Level 1 SP. This is a sufficient condition to qualify them for classification at this Level. In such cases, the SP is expected to comply with the requirements of Level 1 as appropriate in light of the nature of the digital service offered.
 - 2. Satisfying all of the following conditions is sufficient to qualify an SP for classification at Level 1:
 - a. The SP provides one or more digital services available to the general XSEDE community;
 - b. The service(s) substantially augments the digital services already available to XSEDE;
 - c. Access to those digital services must be made available through the XSEDE allocation process; and
 - d. The SP provides “full” integration into and support of the XSEDE environment and conformance to the “Production Baseline” as currently described in two documents entitled the *XSEDE SP Software and Services Baseline* and the *XSEDE Technical Security Baseline*. (Current versions of these documents are available at: <https://www.xsede.org/project-documents>; these and any other documents will be living documents with current versions maintained on this page.)
- b. An SP may be classified as Level 2 in the following ways:
 - 1. NSF Mandate: NSF may mandate that an SP is to be an XSEDE Level 2 SP. This is a sufficient condition to qualify them for classification at this Level. In such cases, the SP is expected to comply with the requirements of Level 2 as appropriate in light of the nature of the digital service offered.
 - 2. Satisfying all of the following conditions is sufficient to qualify an SP for classification at Level 2.
 - a. The SP provides one or more digital services to the general XSEDE community;
 - b. The service substantially augments the digital services already available to XSEDE;
 - c. Access to those digital services may be made available through the XSEDE allocation process; and

- d. The SP provides “partial” integration into and support of the XSEDE environment and conformance to the “Production Baseline” as currently described in two documents entitled the *XSEDE SP Software and Services Baseline* and the *XSEDE Technical Security Baseline*. (Current versions of these documents are available at: <https://www.xsede.org/project-documents>; these and any other documents will be living documents with current versions maintained on this page.)
- c. An SP may be classified as Level 3 in the following ways:
 1. NSF Mandate: NSF may mandate that an SP is to be an XSEDE Level 3 SP. This is a sufficient condition to qualify them for classification at this Level. In such cases, if the SP is providing a digital service, the SP is expected to comply with the requirements of that Level as appropriate in light of the nature of the digital service offered.
 2. Co-branding: It is sufficient to qualify an SP for classification at Level 3 if a prospective SP provides the specified information regarding the organization, the communities it serves, and the digital services it offers via the XSEDE information services directory. Specific information is provided in the “Production Baseline” documents referenced above.

In addition, each of the following criteria also factor into the evaluation of all new SP member requests. An applying organization should describe its capabilities and activities that address each of the criteria.

- a. Organizational objective to provide resources and/or services to the XSEDE community (Level 1 or Level 2) and its local users or to register resources or services in XSEDE information services (Level 3).
- b. Specify the type of services, activities, and contributions the organization plans to have in the XSEDE community.

E. Process for Changing the Status of Existing XSEDE Federation Members

A change in status of existing members may include a Service Provider changing Levels or leaving the XSEDE Federation. This can occur if the Service Provider no longer offers the service that was the basis for their initial application to the XSEDE Federation, wishes to change its Level of service, or does not meet the requirements for participation at that Level. For NSF-mandated SPs, the presumption is that the SP should change status no later than the end date of their NSF award. It could also occur if the Service Provider now meets requirements that it did not satisfy earlier.

Note that an SP that changes Level within the XSEDE Federation remains a member of the SP Forum, but its voting rights will reflect the different Level in the XSEDE Federation. An SP that leaves the XSEDE Federation altogether may still remain a member of the SP Forum, but would not participate in some XSEDE-specific voting activities.

- a. A Service Provider can request a change in status at any time (subject to constraints from NSF awards). For straightforward requests to leave the XSEDE Federation, the XSEDE Project Director has the authority to approve the request without further discussion, and will notify the SP Forum Chair. For a request to change Levels a written request should be submitted electronically to the XSEDE Project Director with the nature of the request and the rationale; as appropriate, information listed in Sections C and D should be updated.

- b. The XSEDE Project Director can initiate a process that results in the involuntary change in status of an XSEDE Federation SP.
- c. In order to retain membership as an XSEDE Federation SP at a given Level, organizations must maintain the services and/or resources and fulfill the participation requirements as described in their agreement with XSEDE and this document.
- d. If there is an issue regarding an SP not meeting the agreement requirements, the XSEDE Project Director or their delegate will investigate the situation and report back their findings in writing to the SP in question and the XSEDE SMT. The SP in question will then be afforded an opportunity to make a formal response in writing to the XSEDE SMT regarding the question of the SP status and fulfillment of the agreement with XSEDE. In the event that the XSEDE Project Director or their delegate determines that the terms of the agreement have not been satisfied, the XSEDE Project Director will initiate a vote of the XSEDE SMT to involuntarily remove that member from the XSEDE Federation or change Levels. If such a vote passes, the XSEDE Project Director will inform the SP in question and the SP Forum Chair of the XSEDE SMT decision.
- e. Organizations that are removed as XSEDE Federation members shall be reconsidered for future membership at such time as they again meet the membership criteria and reapply to join the XSEDE Federation.